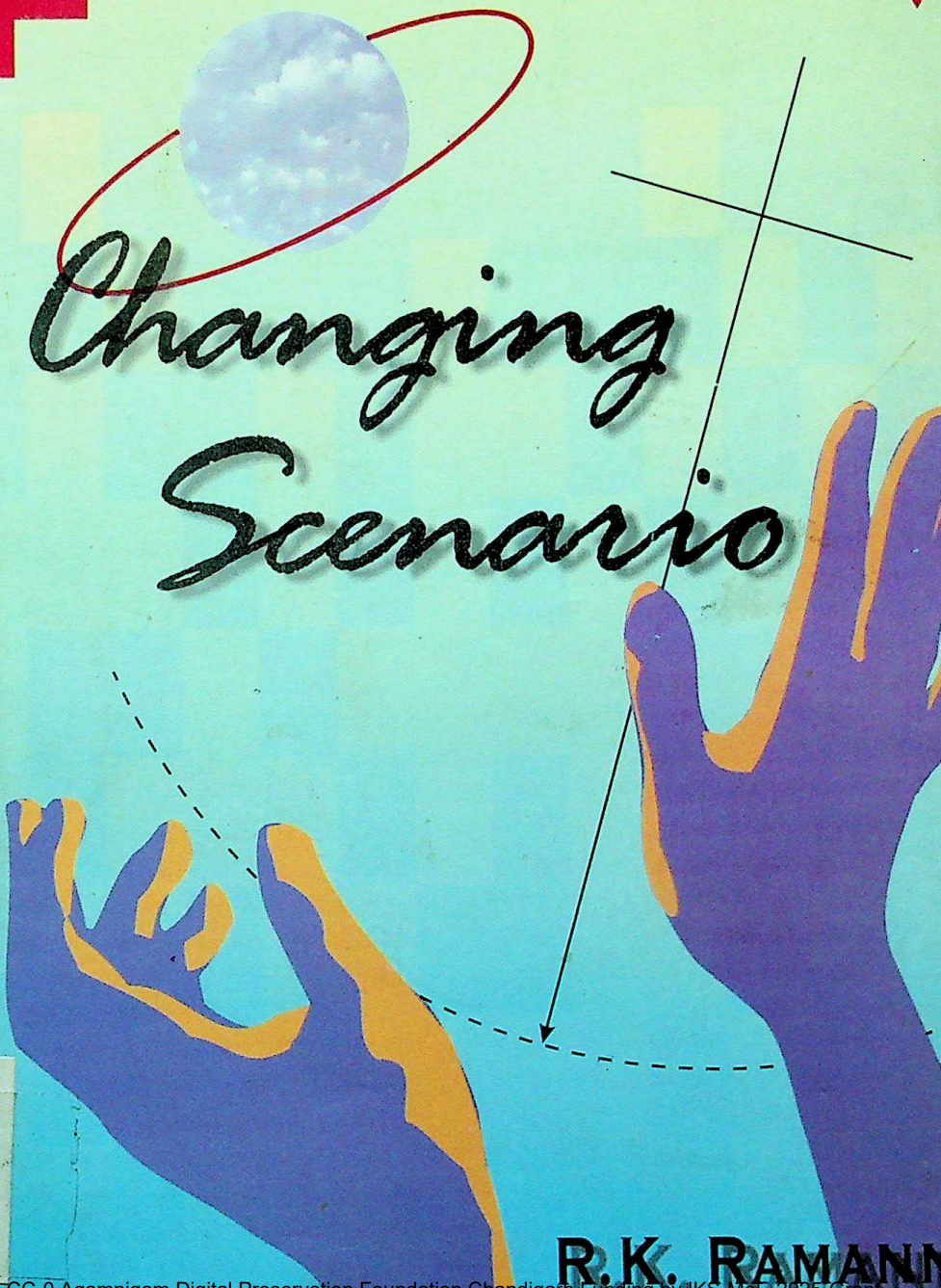


► EDUCATION ▼

Gandhi Memorial College Of Education Bantala Jammu



Changing Scenario

R.K. RAMANNA

The National Policy on Education visualised education as a dynamic, cumulative, life-long process, providing diversity of learning opportunities to all segments of society. It envisaged improvement and expansion of education in all sectors; elimination of disparities in access and stresses on improvement in the quality and relevance of education at all levels-from primary to higher education along with technical and professional education. The National Policy on Education (NPE) also emphasised that education must play a positive and interventionist role in correcting social and regional imbalances in empowering women and in securing a rightful place for linguistic and minorities.

The nation is now firmly committed to provide Education For All. Overriding priority to provide compulsory primary education, coverage of children with special needs, eradication of illiteracy, vocationalisation, education for women's equality, special focus on the education of SCs/STs and Minorities are the major strategies to achieve the national goal of Universalisation of Elementary Education.

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Gandhi Memorial College

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Preface

Education is an instrument for developing an economically prosperous society and for ensuring equity and social justice. The education scenario at the time of independence was structurally flawed with inequities characterised by gender, social and regional imbalances. Even though the post-independence period saw significant achievements in the field of education, the structural flaws continued and, to a certain extent, got accentuated. An attempt to take a holistic view was made in 1986 through the National Policy on Education.

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Editor

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1

Introduction

Education develops manpower for different levels of economy and empowers the poor masses to become self-reliant enough to participate, in the process of national development. Education is an instrument for developing an economically prosperous society and for ensuring equity and social justice. The education scenario at the time of independence was structurally flawed with inequities characterised by gender, social and regional imbalances. Even though the post-independence period saw significant achievements in the field of education, the structural flaws continued and, to a certain extent, got accentuated. An attempt to take a holistic view was made in 1986 through the National Policy on Education. The National Policy on Education, 1986 is a landmark in the history of Indian education. The National Policy on Education visualised education as a dynamic, cumulative, life-long process, providing diversity of learning opportunities to all segments of society. It envisaged improvement and expansion of education in all sectors; elimination of disparities in access and stresses on improvement in the quality and relevance of education at all levels-from primary to higher education along with technical and professional education.

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The nation is now firmly committed to provide Education For All. Overriding priority to provide compulsory primary education, coverage of children with special needs, eradication of illiteracy, vocationalisation, education for women's equality, special focus on the education of SCs/STs and Minorities are the major strategies to achieve the national goal of Universalisation of Elementary Education (UEE).

The educationally backward areas are given special attention to remove regional disparities. Emphasis has been laid on the improvement of infrastructural facilities in the primary schools to make the school environment more attractive. Flexible and innovative programmes in the form of Non-Formal Education have been launched to cater to school dropouts, girls, working children, etc. The National Literacy Mission was set up to represent a national and political commitment on the need to harness all social forces to achieve the objective of eradicating illiteracy and effecting a qualitative change in the lives of the people. It has made it possible for the country to set a target of making 100 million non-literates in the age group of 15-35 years functionally literate. Vocationalisation has been given emphasis to develop healthy attitude among students towards work and life, to enhance individual employability to reduce the mismatch of demand and supply of skilled manpower, and to provide an alternative for those intending to pursue higher education without particular interest or purpose.

Secondary education has its importance in the national development as it provides large skilled manpower for the economy and prepares for higher, technical and professional education. It is the stage where

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a proper understanding of work ethos and values of a humane and composite culture is provided to future citizens of the country. There is great demand for expansion of higher education on account of increasing expansion of primary and secondary education and rising social expectations. Consequently, emphasis has been on the removal of disparities and to equalise educational opportunities attending to the specific needs to those who have been denied equality so far. The country is passing through major economic developments with liberalisation and globalisation of the economy. The universities are also expanding their territorial boundaries through distance education. In all these areas, quality assurance has become a major focus.

Educational development is a participatory process. Education was incorporated in the Concurrent List to facilitate evolution of all India policies in the field of education. The concept of concurrency implies a meaningful partnership between the Union Government and the States. While the role and responsibility of States to provide education continues to remain essentially unchanged, the Union Government has assumed a larger responsibility to reinforce the national and integrated character of education, to look after the international aspects of Education, Culture and Human Resource Development; and, in general, to promote excellence in all sectors of education throughout the country. Having regard to the size of the population, diversity and economic frailties the challenges are enormous. This realisation has resulted in steadily rising levels of budgetary allocations, and resource transfer for educational initiatives to the States. Given in the succeeding paras is a resume of the current state of education in some of the areas of fundamental concern.

The Elementary Education system in India is one of the largest in the world. There has been massive

expansion of Elementary Education (EE) during the post-independence period, however, the goal of Universalisation of Elementary Education (UEE) is yet to be achieved. Universal access, universal retention and universal achievements are broad parameters to achieve UEE. Considering the magnitude and the complexity of the problem, meticulously formulated strategies have been adopted in the form of Operation Blackboard (OB), Non-Formal Education (NFE), Teacher Education (TE), District Primary Education Programme (DPEP) to address the specific problem areas, gender and regional disparities. Special focus has been laid on the access to education for millions of girls and working children, who cannot participate in the school system on account of socio-economic compulsions. These segments largely constitute girls, SCs/STs and the other deprived sections of the society.

Unattractive school environment, unsatisfactory conditions of buildings and insufficiency of instructional material acting as major demotivating factors for enrolment and retention of children in primary schools called for a drive called Operation Blackboard for substantial improvement in the infrastructural facilities at the primary stage. The physical targets for the Eighth Plan were achieved with remarkable success. The scheme has been expanded to cover upper primary schools as well. A national evaluation of the scheme has been entrusted to NIEPA recently. A large and systematic programme of Non-Formal Education (NFE), which is an integral component of the strategies to achieve UEE has been taken up to cover children who cannot attend formal school due to socio-economic compulsions. Girls, working children, dropouts and those belonging to SC/ST and deprived sections of the society stand to benefit from this approach. NFE has enough flexibility to provide education at their doorsteps to enable them to learn at

their own pace and convenience. The major challenge is for NFE to maintain quality comparable with the formal system. The National Programme of Nutritional Support to Primary Education is intended to boost enrolment, attendance and retention in primary schools and also to supplement nutritional requirements of children. The scheme covers the children studying in primary classes in the Government, local body and Government- aided schools throughout the country. Total beneficiaries are estimated to be 9.75 crores in nearly 6.88 lakh primary schools in the country during the period under report.

The District Primary Education Programme provides special thrust to achieve Universalisation of Primary Education (UPE) through decentralised planning and management, disaggregated target setting, community mobilisation, district and population specific planning. The programme mainly aims at providing access to primary education for all children, reducing dropout rates to less than 10 per cent, increasing level of achievements of primary students by at least 25 per cent and reducing the gap among gender social groups to less than 5 per cent catering to the needs of special target groups like tribals, SCs, women and other marginalised sections. The Teacher Education scheme envisages setting up of DIETs in each district to provide academic and resource support to elementary education teachers and non-formal and adult education instructors. It also envisages establishment of CTEs/IASEs to organise preservice and in-service training for secondary teachers and provide extension and resource support service to secondary schools. IASEs are expected to conduct programmes for preparation of elementary teacher educators, conduct in-service training for elementary and secondary teacher educators and Principals of secondary schools; engage in advanced level fundamental and applied research especially of inter-disciplinary nature;

and provide academic guidance to DIETs and support services to CTEs. 448 DIETs, 76 CTEs and 34 IASEs have been established under the scheme till the end of January 1999.

Some area-specific externally aided projects in the field of primary education are also being implemented. Shiksha Karmi Project (SKP) aims at universalisation and qualitative improvement to primary education in remote and socioeconomic backward villages of Rajasthan with focus on girls. It identifies teacher absenteeism as a major problem in primary schools and in inaccessible areas. Mobilisation and participation of the community to improve primary schools is an important feature of the project. Lok jumbish is an innovative people's movement for education. Bihar Education Project (BEP) is meant to provide education for all through people's mobilisation and participation. It is a basic education project which aims at bringing out qualitative improvement in the educational system and overall socio-cultural situation in Bihar. Although special programmes have been taken up to improve upon specific deficiencies in the educational system, no strategies can succeed in achieving UEE without specifically addressing its gender and regional dimensions. Gender disparities are conspicuous in India. Recognising this gender bias, most programmes have specific components for ameliorating the condition of the girl child.

Literacy is an important tool for communication, learning and information. It is a virtual precondition for individual and national development. The National Literacy Mission represents a national and political commitment on the need to harness all social forces to achieve the objective of eradicating illiteracy and effecting a qualitative change in the lives of the people. It has made it possible for the country to set a target to make 100 million persons in the age group of 15 to 35

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years functionally literate in the foreseeable future. The Total Literacy Campaign (TLC) is the principal strategy adopted by NLM for eradication of illiteracy in the country. The Literacy Campaigns are area-specific, time-bound, delivered through voluntarism, cost effective and outcome-oriented. After completion of the TLC in a district, Post Literacy Programme (PLP) is launched to mop up the leftover illiterates and also to consolidate the gains accrued during TLC. This enables the neo-literates to develop abilities for self-learning and skill upgradation. A total of 450 districts have been covered by TLCs. Of these, 250 districts have moved into the Post Literacy phase.

The ultimate objective is to carry forward the literacy programmes in the district to the third phase of life-long learning which is conceived under the scheme of Continuing Education. In this final phase the Centre-based approach in a revitalised and restrengthened form is brought back to the centrestage of adult education activities.

The Continuing Education Centres would aim to create a learning environment in the villages and habitation which they serve. There would be opportunities here for addressing the residual non-literates and for providing neo-literates with Equivalency Programmes, Income Generation Programmes, Quality of Life Improvement Programmes, and Individual Interest Promotion Programmes. The NLM takes special care to emphasise linkages between literacy and life and in so doing provides enhanced opportunities for skill development and improved income generation. This attempt is operationalised through the scheme of Shramik Vidyapeeths. The basic idea behind the multi-dimensional or polyvalent education approach to the education of urban working community in Shramik Vidyapeeth is to meet the various inter-related needs of

target groups which mainly constitute the socially and economically deprived sections of worker communities with specifically tailored programmes. This provides knowledge and imparts vocational and technical skills in an integrated manner. The programme helps in enhancing employment opportunities and supplementing their income. The NLM also lays emphasis on involving voluntary agencies. Several of them have been provided with assistance to take up innovative programmes on adult education in various parts of the country.

The NLM also has set up 25 State Resource Centres which provide academic input, improved training practices and opportunities for creation of imaginative literature for neo-literates. Under Adult Education Programmes 72.56 million persons have been made literate so far, 60 per cent of them are women: 22.40 per cent are SCs and 13.20 per cent belong to STs. The NLM has a system of concurrent and external evaluation of literacy campaigns and post-literacy programmes by reputed research agencies in the field of social sciences.

According to the National Sample Survey Organisation (NSSO) the percentage of literacy has increased from 52 in 1991 to 62 in 1997 and projected at 64 for 1998. The quantum jump of 10 percent between 1991 and 1997 and 12 per cent between 1991 and 1998 thus compares extraordinarily favourable with the decadal trends of previous years which are at an average of 8.5 per cent since Independence. The urban-rural differential in literacy rates has also shown a marked decline of 4 per cent, this is faster than in any previous decade. The rise in female literacy between 1991 and 1997 has been 11 per cent whereas the male literacy rate has risen by 9 per cent. This is a tribute to the special emphasis laid by NLM on women's participation. With annual rate of literary growth of 2 per cent revealed by NSSO survey, India could be expected to touch

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sustainable threshold level of 75 per cent by 2005. Although the literacy campaigns are being implemented with varying degrees of success, it is certain that remarkable progress has been achieved. The focus is now on the four low literacy Hindi-speaking States which together account for nearly 50 per cent of the total number of illiterates in the country. Now that the process has begun in these States as well, the goal of universal literacy appears closer.

Some of the spin-offs of TLCs have been improved enrolment at primary level; social empowerment of women; improvement in immunisation and acceptance of the small family norms and organised correction of superstitions and social evils. This has generated a great demand for adult education projects throughout the country.

The National Literacy Mission has undertaken a number of new initiatives in adult education. These include rigorous system of monitoring of literacy campaigns; transparent and more effective evaluations; sensitising Panchayati Raj representatives to ensure mass participation in literacy programmes and decentralising of financial and administrative powers to State Literacy Mission Authorities.

Secondary Education which serves as a bridge between primary and higher education serves a step towards preparation for higher and professional education. Socio-economic imperatives and initiatives taken during the Eighth Plan to provide learning facilities to school-going children up to elementary stage, has necessitated that the perspective for Secondary Education Sector in the Ninth Plan would be, besides vocationalisation, substantial expansion of infrastructure, innovation in harnessing technology for improved teaching/ learning and quality upgradation. This

visualises the maximum expansion requirements of the secondary education infrastructure during the Ninth Plan without diluting the quality. The schemes initiated during the Eighth Plan such as Vocationalisation, Improvement of Science Education, Computer Literacy, Educational Technology, special interventions for girls, Integrated Education of Disabled Children, etc. have been made fully functional during the Ninth Plan. Besides, applications of available communication technology to promote school education at all levels and in all areas figure prominently in the deficient and remote areas. For this, open learning system (Distance Education) has been emphasised.

The key issues in Secondary Education apart from access are quality, relevance, modernisation and diversification. The norms developed by the NCERT for standards of minimum facilities for schools are being provided. The concept of Minimum Levels of Learning is being extended to the secondary stage as well.

Emphasis has been laid on programme in Value Education, Population Education and various newly emerging concerns such as Human Rights, Adolescence Education. Greater diversification and flexibility, proper education materials, capacity building in the schools to gradually eliminate the domination exercised by the public examinations are some of the aspects of modernisation of curriculum.

The NCERT continues to play a nodal role in evaluation of textbooks from the standpoint of national integration and incorporation of core elements outlined in the National Policy on Education (NPE). More transparency and authenticity is being visualised as a part of examination reforms. Teacher Education is being strengthened to provide quality pre-service and in-service training to secondary school teachers to update their

competency and professional skills. The thrust on Vocational Education is continuing to meet the increasing demand of skilled manpower in the context of changing economic environment with globalisation and consequent induction of new and emerging technologies. Given the complexity and magnitude of the task a multi-pronged strategy has been adopted with multiple entry and exit options to vocational students. Almost 35 per cent of children drop out before reaching Class V and over 50 per cent reach Class VIII Finally, only about 6 per cent reach the degree level and hence, intervention at each stage in the form of vocational education is necessary to enable the potential dropouts with some skills. The programme is being strengthened and expanded.

Kendriya Vidyalayas and Navodaya Vidyalayas are promoting excellence in education with a national identity throughout the country.

Navodaya Vidyalayas have an added objective to provide opportunities to talented rural children particularly girls of deprived sections of the society. These schools are intended to become pace-setters of a nationwide programme of school improvement with innovation and experimentation. The National Open School has been providing flexible life-related education through distance education mode to deprived and socio-economically backward sections of the society in the remotest parts of the country. It designs, develops and offers flexible courses at secondary/ senior secondary stage and is equipped to meet the growing demand of those who find it difficult to attend full time school and the working people, who could not complete secondary stage.

The major beneficiaries are women, SCs/STs; and other deprived sections of the society. The technological advancement has increased its potential substantially.

The National Council of Educational Research and Training (NCERT) continues to provide major resource support to school education in the form of various experimental innovative programmes; to diversify and make qualitative improvements in secondary education and also reducing the burden of school bag. The NCERT textbooks have the unique distinction of being attractive and inexpensive.

Higher Education has a crucial role to play in the process of progress and modernisation. There has been considerable expansion of higher education with its role for economic and social development.

The expansion of the system has been affecting the quality to a great extent. The Government, during the year, has tried to focus upon the initiatives to address the quality issues in higher education.

There has been consistent efforts to improve upon the salaries and service conditions of University and College teachers so as to attract talents in the teaching profession.

Accordingly, the recommendations of the Fifth Central Pay Commission were extended to the University and College teachers with further improvement and modifications in the scales suggested by the committee earlier set up by the UGC for this purpose. As a result, the expenditure on account of the salaries to Central University teachers increased over Rs 300 crores during the year 1998-99.

The country made significant contribution to setting up the world agenda for higher education in the twenty-first century. A high power delegation led by the Minister for Human Resource Development attended the UNESCO World Conference on Higher Education held at Paris between 5-9 October, 1999. India's amendments to

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the World Declaration on Higher Education were highly appreciated by the Conference. One such accepted amendment. Ultimately, higher education should aim at the creation of a new society—non-violent and non-exploitative—consisting of highly cultivated, motivated and integrated individuals, inspired by love for humanity and guided by wisdom.

The Government took concrete measures to reform Higher Education and initiated steps for restructuring the UGC to achieve the purpose, during the year.

A Task Force, headed by Prof. Amrik Singh submitted its report and has recommended amendments in the UGC Act so as to provide for wholetime members in the Commission, increase the penalty for running fake universities and awarding unrecognised degrees and make the laws more stringent, regulate the operation of foreign universities, encourage the setting up of self-financing institutions that could award degrees also and allow colleges and universities to determine the tuition fees within a broad policy framework and guidelines. By the end of Ninth Plan it is expected that at the rate of 5.5 per cent compound rate of present growth there will be 8.5 per cent million students, and 10,000 colleges. Innovative initiatives have been taken up in the form of distance education to cater to the unprecedented expansion. It is expected that reforms initiated in Higher Education during the year would go a long way to meet the needs and challenges of the system in terms of quantity as well as quality.

Technical Education which includes Management Education as well, is the main vehicle of social and economic transformation in the country. It is one of the most vital and significant components of the human resource development spectrum with great potential for adding value to products and services, for contributing to

the national economy and for improving the quality of life of the common man. It has also been instrumental in making significant contribution to India's economic development by way of manpower production and relevant activities suiting to the needs of the industry and society and adapting to the vast changes in the global economy.

The rapid industrialisation during the post-independence period witnessed phenomenal growth of technical education facilities in the country.

The first three Five Year Plans were devoted to expansion of technical education to meet the growing demands for technical personnel at Diploma, Degree and P.G. levels. From the Fourth Five Year Plan onwards, emphasis was on the improvement of quality and standards of technical education.

Apart from the Government Sector, involvement of private and voluntary organisations in setting up of Technical and Management Institutes helped in the expansion of the system. From 43 Polytechnics with an intake of 3,400 students at the time of Independence, the number has grown to 1, 128 Polytechnics with the intake of 1.90 lakh students in 1997.

Similarly, the number of Degree level institutions and the corresponding intake figure rose from 38 and 2940 in 1947 to 552 and 1.36 lakh in 1997. 185 institutions today conduct P.G. courses in Engineering and Technology with an annual intake capacity of 16,800. Facilities for Doctoral Studies in Engineering, Technology and Applied Sciences have also been created in a number of Technical Institutions. This quantitative increase had its repercussion on the quality of technical education. A mushroom growth of self-financing private Engineering Colleges/Technical Institutions in the country, particularly in the southern region was causing concern.

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to the policy makers, throwing to the winds all norms and standards for ensuring quality technical education. Accordingly, AICTE which was an advisory body since 1945, was given statutory status with the introduction of AICTE ACT, 1987 with a view to the proper planning and co-ordinated development of technical education system throughout the country.

The AICTE issued Regulations in October 1994 relating to grant of approval for starting new technical institutions, introduction of courses or programmes and approval of intake capacity of seats for the courses for programmes. These were subsequently amended in May 1997. The technical education system was to enhance its coverage and accessibility suiting to the needs of organised as well as unorganised and rural sectors with its relevance to productivity.

Several initiatives were taken to revamp the technical education system by modernising the laboratories, etc. in technical institutions, promoting industry-institution interaction, providing continuing education for upgrading the skill and knowledge of technical personnel working in industry and services sector, transfer of technology to the rural sector and setting up of Technology Development Missions to meet the emerging challenges in the field of engineering and technology with active participation of industries.

A major project was undertaken with the assistance of the World Bank to upgrade the technician education system for enabling the Polytechnics to improve their capacity, quality and efficiency.

The scheme of Community Polytechnics was launched that aims at sustainable community development without environmental degradation by way of science and technology applications for socio-economic uplift and improvement in the quality of life of the

common man through micro-level planning and people's participation at the grassroot level.

The scheme lays stress on poverty alleviation, employment generation and removal of drudgery for the women through location-culture specific non-formal need-based short term training in skill oriented technical /vocational trades. To upgrade the Technician Education System in the Polytechnics, in the terms of capacity, quality and efficiency, a massive World Bank aided State Sector Project was launched in two phases starting 1990. The fall-out of the project created increase in women's participation in Technician Education from 12 per cent to 27 per cent through establishment of new Women's Polytechnics and Women's Wings in the existing Polytechnics.

To render the benefits of techno-economic advances in Technical Education towards rural/community development, the scheme of Community Polytechnics with Extension Centres are functioning all over the country today including hilly, desert, coastal, remote, difficult and minority concentrated areas. Meaningful and relevant Apprenticeship Training is being provided under the apprentice Act, 1961 (amended) to a large number of Engineering Degree, Diploma and 10+2 (Vocational) Pass-outs to bridge the gap between the world of Academics and the Industry and to help them achieve better employment prospects. Development of appropriate technical manpower with assured quality in technology and management areas, was sought to be achieved through establishment of six Indian Institutes of Technology and six Indian Institutes of Management at different places in the country. Two specialised institutes with flexible academic design and non-conventional modular courses at Certificate, Diploma and Degree levels in Engineering /Technology/ Applied Sciences, viz. (i) North Eastern Regional Institute of Science and

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Technology (NERIST), Itanagar, Arunachal Pradesh and (ii) Sant Longowal Institute of Engineering and Technology at Village Longowal, Sangrur, Punjab were also set up for appropriate manpower development in technical areas.

An Institute for Information Technology and Management for development of specified technical manpower in the emerging area of Information technology has also been set up at Gwalior. It may thus be seen that India has a large infrastructure of technical institutions spread all over the country which qualitatively and quantitatively can compete with the best available facilities in the world.

The Indian -Institutes of Technology (IITs) are premier centres of education and training in engineering and applied sciences at under-graduate level and provide facilities for post-graduate studies and research.

Indian Institutes of Management (IIMs) have been functioning as centres of excellence with the objective of providing education, training, research and consultancy in management.

Indian Institute of Science, Bangalore has earned recognition as centre of research in basic and engineering sciences and allied fields. Excellence and creativity in research and development and learning programmes have characterised academic activity of the Institute.

The Institute has also set up Super Computer with an Internet Hook-up. The National Policy on Education has laid emphasis on modernisation and removal of obsolescence of laboratories and workshops of engineering colleges and polytechnics in order to enhance functional efficiency. The scheme covers IITs and Regional Engineering Colleges (RECs) and other Engineering Colleges, Technical Faculties of Universities and Polytechnics.

Priority is being given to bring industrial commercial system and institutions closer.

Technology missions in seven identified generic areas of strategic significance have been set up on the basis of their relevance to the Indian economy through IITs and IISc. The missions have earned wide acceptance and confidence among industries for development and know-how transfer of various technologies/ products by them and as such a unique example of industry-institute partnership has been established.

The technical education system is vibrant even in the remote areas of North East (including Sikkim), Andaman & Nicobar Islands, Jammu & Kashmir and the Union Territories of, inter alia, Daman and Dadra & Nagar Haveli.

Towards promotion of overall societal development in such areas through technological inputs, expansion of technical education facilities is always encouraged through establishment of newer technical institutions and strengthening of the existing ones through all sorts of academic, technical and managerial support, co-operation and guidance.

While we have higher level technical institutions like (i) I.I.T, Guwahati, (ii) NERIST, Itanagar, (iii) R.E.C., Silchar and scores of Diploma level Polytechnics in the North East, the Union Territories of Delhi, Chandigarh and Pondicherry offer high quality technical education through Degree and higher level technical institutions as well as Diploma level Polytechnics which are there even in the other UTs of A&N Islands, Daman and Dadra & Nagar Haveli.

The State of J&K does not lag too far behind with one Regional Engineering College at Srinagar, one Government College of Engineering and Technology at

Jammu and a large number of Polytechnics in the State.

In spite of the massive and cumulative build-up of a diverse infrastructural base, technological capability and institutional growth stand threatened from the sudden and complex change in the industrial base of the country and the advent of global competition in the wake of economic liberalisation.

Under the scheme of Teacher Education it has been decided to undertake an assessment of the technical and infrastructural capacity of DIETs with a view to critically assessing the adequacy and quality of various training resource functions being carried out and to recommend immediate and long-term actions aiming towards strengthening of capacity of DIETs thereby enabling them to discharge their critical functions as nodal district level training institutions and as a vital link in achieving the national goal of Universalisation of Elementary Education.

The first in-depth review of District Primary Education Programme generally commended the progress of programme implementation and has observed that the impact of DPEP on the entire Primary Education system is visible. There has been increase in enrolment in the DPEP districts, gender and social inequities have been substantially reduced and preliminary signs of increased learning achievements are in evidence.

In the scheme of Vocational Education, a network of external agencies have been used for the evaluation of the scheme on a state-wise basis.

The National Literacy Mission (NLM) has a system of concurrent evaluation by which each literacy campaign district is subject to external evaluation by the end of the Project.

The NLM has identified agencies capable of undertaking external evaluation. Efforts have been made to provide substantive funding for strengthening the programme of modernisation and removal of obsolescence in order to upgrade the infrastructural facilities and thereby improving the overall quality of Technical Education all over.

2

Education for National Integration

The first time Prime Minister of India Jawaharlal Nehru has said, "In India, the first essential is the maintenance of the unity of the country, not merely a political unity but of mind and heart, which discards the urges which separate and disunite and which breaks down the barriers, which are raised in the name of religion or between state and state or any other form. It is of the first importance that we should not lose ourselves in the passion and prejudice of the moment. National integration and cohesion is a matter of vital importance today. It is the base of all other activities which we try to further". In this thoughtful passage Nehru has rightly remarked that unity of the country or national integration is of first-rate importance. Secondly, a merely political unity as now obtained under the Constitution of India after Independence is not enough, a unity of mind and heart i.e., intellectual as well as emotional integration should be promoted on priority basis. Thirdly, such a unity should break down the barriers of religion, region or any other kind. Fourthly, we should not be led astray in the spur of the passion or prejudice. Fifthly, national cohesion is the prerequisite of and precondition for achieving development in various fields.

When India attained freedom, prophets of gloom and doom prophesied that the country would

disintegrate into many separate parts and be engulfed in anarchy. However to their discomfiture this did not happen. Although this country with its glorious heritage has survived many crisis, various fissiparous tendencies in the body politic of our country have resulted in disintegrating situations in which national development has suffered a setback and national resources have undergone colossal wastage. That is why, every body is concerned with these uncomfortable and disappointing conditions.

It is said that India was never a united country, that it was never a nation, that it had never had one language or even one religion. It was never an economic entity. It was never under one ruler or political force as a whole. India has possessed multifarious faiths, races, languages, dialects, traditions and habits. In physical appearances there are vast differences throughout the country. But there is unity in these diversities. The unity of a nation does not mean uniformity or conformity. It depends on the determination and will of the people.

It is more psychological or emotional than external or organisational. Of course, external factors like geographical contiguity, historical identity, religious similarity, linguistic, political or economic unity greatly promote such psychological matter. The Swiss people have no common language nor the same culture. In United Kingdom there are differences among the English, Welsh and the Scots, but they are united in loyalty to their national ideals. The USA being mostly a land of emigrants have national unity and democratic pride. The Russian people have numerous languages, but feel emotional unity as the citizens of a premier community country of the world. This shows that differences in language, belief, culture, economic or political systems do not stand in the way of national unity. The nationhood thus does not depend on race or language or religion or

geography singly or collectively. The unity of India has always been fostered passionately by the saints, seers, hermits, philosophers, law givers, writers, poets and artists. Most of them are all-India personalities and their name and fame are not limited to a particular religion.

The great men of the modern India whether in the field of religion, philosophy, art, literature, poetry, fine arts, science or politics are all-India personalities Sri Ramakrishna, Vivekanand, Aurobindo, Swamy Dayanand, Ram Mohan Roy, Tilak, Gandhi, Rabindranath and many others were all-India dignitaries. All languages of India are sisters, Sanskrit being the common most important source and link in the whole structure. The Vedas, Upanishads, Manu Samhita and the great epics are still regarded as the fountain heads of Indian culture. The Western civilization has contributed the modern democracy, secularism, socialism, scientific and technological knowledge which have tied the country with common bandages. Lastly, the struggle for Independence, the Constitution of India and its federalism have contributed the growth of unity in this land.

In spite of all these favourable factors the modern India is very often threatened by centrifugal forces. The fissiparous tendencies like religiousism, communalism, linguism, provincialism are raising their ugly heads. Now the diverse forces are working in different parts of the country—in Jammu and Kashmir, in Assam, in Mizoram, in Nagaland and so on. The Dravid Munnetra Kazhagam Party had also advocates for a Dravid land separate from the Indian Union. Economic inequality is helping the disintegrating forces. This has also led to regional rivalry and disparities.

Linguism has created conflicts in many parts of the country. Southerners agitate against so called "Hindi-

Imperialism" time and again. Power-seeking politicians exploit mob-psychology and sustain on the ignorance and poverty of the masses.

Baseless and fabricated facts are placed before the people who emotionally inflict sufferings on the innocent persons. Having been misled, the ignorant people perpetrate arson, looting, rape, murder and so on. Candidates contesting in the election are sometimes elected not on their worth, but on caste or communal considerations. Politicians feel that the easy road to success in election is to exploit religions or linguistic differences. Summing up these disintegrating trends, the Indian Education Commission, 1964-66 have observed, "The old values which held society together, have been disappearing and as there is no effective programme to replace them by a new sense of social responsibility, innumerable signs of social disorganisation as evident everywhere are continual on the increase. These include strikes, increasing lawlessness and a disregard for public property, corruption of public life communal tensions and troubles".

Since national or emotional unity or integration was felt desirable for security, and prosperity of the country, Indian leaders and thinkers here started contemplating seriously. The conference of State Education Ministers in 1960 considered the disruptive forces in the country and suggested the Government of India in the Ministry of Education to appoint a committee for considering the question of national/emotional integration. In 1961 a Committee was set up under the chairmanship of Dr. Sampurnanand to examine the issue and study the role of education to promote national unity, to study the fissiparous tendencies and to recommend ways and means for promoting emotional integration. The Committee submitted its report in 1962.

The Committee at the very outset observed, "In making these suggestions, the Committee would like to stress the composite structure of Indian culture and the need to prepare unity in diversity by cherishing and respecting equally the various cultural strands which enrich Indian civilisation." Indian culture is a mozaic of various languages, dialects, religions, castes, creeds, customs and traditions. But the threads of oneness have been intertwined with there vast differences and these has been unity amid diversities. All this should be allowed to develop individually as well as collectively and handicapping one's growth will impair the general development. In this context Rabindranath has artistically put forth his remarks, "Indian culture is a full-bloomed lotus in whose every petal flows the culture of different types of odour; if one of the petals is distorted or remain underdeveloped, the beauty of the flower gets impaired".

With a view to achieving the desired ideal of national/emotional integration, education has to play a very significant role. It has to take the responsibility for inculcating a sense of national unity and foster a feeling of solidarity. The Committee on Emotional Integration has rightly held, "Education can play a vital role in strengthening emotional integration. It is felt that education should not aim at imparting knowledge, but should develop all aspects of students' personality. It should broaden the outlook, foster a feeling of oneness and nationalism and a spirit of sacrifice and tolerance so that narrow group interests are submerged in the larger interests of the country".

This programme of national integration may be discussed in the context of the following aspects of education:

1. *Curriculum Programmes*: Appropriate reforms may be introduced in the curriculum a new topics with all-

India importance and reference may be emphasised. Subjects like history, geography, social studies etc., will intensify national integration. A comprehensive knowledge of these subjects should be imparted to every child. Biographies of national heroes, folk tales from different regions, stories on cultural heritage should find place in the curriculum. Map-reading should be given due importance so that students will have a clear concept of the vastness and geographical features of the motherland. Indian history with stress on national features and characters should be taught in the schools. A short and simple history of national movement should be read in the schools. As recommended by the Committee on National Integration, the study of a modern Indian language other than one's regional language should be compulsory. The textbooks in all the subjects of study should be recast and modified according to the requirement for national unity.

2. *Cocurricular programmes:* Cocurricular activities should be given important place in the schools. Pupils may be provided with opportunities of mixing with others of different cultures. Dramas based on national themes should be staged twice or thrice annually in each school. The students may be taken on excursion to other states. Educational films based on nationalism and national unity should be screened; radio talks on national integration should be broadcast as frequently as possible for the school children and pupils may be encouraged to participate in the festivals and functions of other communities.

The National Integration Committee has laid great stress on the daily assembly in schools be a talk for ten minutes by the head of the roll-call there should be a talk for ten minutes by the head of the institution or senior teacher or a guest speaker. The talks may be on the achievements of

the nation, contributions of some national heroes, character-building of the pupils, social, political and cultural life of people. The Committee has also held that there should be an annual gathering of students for taking pledge dedicating themselves to the service of their country. Youth Hostel Movement should gather momentum and Youth Hostels should be set up at selected places in various states for facilitating organisation of youth programmes from different parts of the country.

3. *Training pupils in democracy*: Ours is the largest democracy in the world and it is based on principles of equality, liberty and fraternity. Our Constitution guarantees these values and ensures the dignity of the individual irrespective of his caste, creed, political, economic and social status. Humayun Kabir has rightly said, "As a democratic republic, India has abolished all vestiges of privileges and vested interest. Our Constitution not only offers but guarantees equality of opportunity to all. Such equality can be realised only in an atmosphere of justice and fair play".

Students, the future citizens of the country should be trained in democracy, its values and ideals, so that they will have sense of justice which is conducive for the development of national integration. Dr Zakir Hussain has therefore observed, "Specially in the particular situation of our country which is striving to build up a structure democratic living in a secular welfare state, the need of educating all to a sense of nationhood and enabling them to fill a place worthily in it is absolutely essential". Thus students should be claimed to understand, practise and uphold the lofty ideals and values of democracy. This will promote social cohesion and national integration.

4. *Training in Secularism:* Our Constitution provides secularism which is interpreted in many ways. According to some, secularism means absence of religion, so that in the country all kinds of religious teaching should be banned. They hold that religion is anachronism, a superstition and a hoax. But this is a dogmatic and lop-sided view. Rather religion in its true sense is a spiritual exercise, an elevating and inspiring activity. It is mostly ethical and humanitarian. Although India has a long-tradition and hoary heritage of religious tolerance, social harmony and universal brotherhood, ironically and unfortunately it was partitioned only on the ground of religious antagonism. Hence in order to maintain communal as well as religious harmony, pupils should be trained in secularism and values of toleration, harmony, brotherhood and fellow-feeling.

The Sri Prakasa Committee set up by the Ministry of Education in 1959 has analysed religion into four aspects: (i) personality of the founder, (ii) philosophy and cosmology, (iii) rituals, and (iv) ethics. Under the first point lives and achievements of great religious leaders like Ram, Krishna, Buddha, Mahavira, Mohammed, Jesus Christ should be taught in the classes. The second and third aspects of religions need not taught in schools. The fourth aspect is common to all religions. That is, the moral and ethical doctrines should be taught to students.

It is argued that due to lack of emphasis on the religious and moral teaching in schools and colleges, there has been rising indiscipline, corruption, moral turpitude and loose emotional behaviour among the modern students and youths particularly. That is why, in order to promote national integration, students should be given knowledge about different religions, imbibed with a spirit of toleration and inculcate with the values of patriotism, fraternity and science attitude towards life and its various activities.

5. *Role of Teachers:* Unless teachers are infused with the spirit of democracy and secularism and inculcated with the values of liberty, equality and fraternity, they cannot motivate and train students in the desired direction. No programme of national integration can succeed without suitable teachers who will be above casteism, communalism, parochialism and all partisan activities. Teachers should set models to be emulated by pupils and think and act judiciously without any prejudice towards a particular region language or religion. Instead of narrow loyalties, teachers should develop patriotic spirit and national unity.

Lastly, it may be concluded in the works of Sampurnanand Committee of National Integration, "Education should therefore, be reoriented and made more broadbased. It should aim at (a) equipping students with an intimate knowledge of different aspects of this country including the events that led to the freedom, and (b) encouraging all studies and activities which led to greater understanding between communities and states, thus fostering a feeling that the certain rights and privileges along with corresponding duties and responsibilities".

3

Elementary Education

An important element of post-independence educational policy has been to provide free and compulsory education to all children at least up to the elementary stage. The constitutional directive has been spelt out unequivocally and emphatically in the National Policy on Education (NPE), 1986 and its Programme of Action (POA), 1992. The Policy envisages that free and compulsory education of satisfactory quality should be provided to all children up to the age of 14 years before the commencement of the twenty-first century. In keeping with the policy objectives, the targets for the Ninth Five Year Plan have been fixed under three broad parameters-universal access, universal retention and universal achievement.

Improved performance of the UEE programmes over the years would be evident from the following:

Accessibility of schooling facilities is no longer a major problem. At the primary stage 94 per cent of the country's rural population now have schooling facilities within one km distance. At upper primary stage also 83.98 per cent of rural population have a school within 3 km distance. Enrolment ratio is 104 for Classes I-V and 67 for Classes VI-VIII.

While the gross enrolment ratio (GER) at the primary stage in the country as a whole and in most of its States exceed 100 per cent, there are quite a few States

where the ratio is considerably lower. These include Uttar Pradesh, Bihar, Rajasthan, Haryana, Jammu and Kashmir and Meghalaya. At the upper primary stage, these States and in addition, Andhra Pradesh, Orissa and Sikkim have GER lower than the national average. In most of these States the literacy rates also are lower than the national average. There is thus a strong regional dimension of UEE.

While Universalisation of Elementary Education is the ultimate goal, no strategy or programme of action can succeed without addressing itself to gender and regional dimensions specifically. Gender disparities are conspicuous in regard to enrolment and retention. Girls' enrolment has grown at primary stages from 5.4 million in 1950-51 to 47.4 million in 1997-98 and that at upper primary stages from 0.5 million to 15.87 million. The rate of growth of enrolment of girls has been higher than that of boys. But disparities still persist as girls still account for only 43.2 per cent of enrolment at primary stage and 39.0 per cent at upper primary stage. The drop-out rate of girls is much higher than that of boys at primary and upper primary stages.

According to the 1991 census, the population of Scheduled Castes (SCs) was 138.12 million (16.33%) and that of Scheduled Tribes (STs) was 67.8 million (8.01 %) of the country's population. The enrolment of SCs and STs has increased considerably at the primary stage because of the affirmative policies of the Government. The participation of SCs and STs is now more or less in proportion to their share in population at the primary level. Drop-outs, though declining over the years, are significantly large. Gender disparities are very conspicuous among SCs and STs also.

In order to achieve Universalisation of Elementary Education by 2000 AD, following key strategies have been worked out in consultation with States and UTs:

- Overcome the problem of school drop-outs and lay emphasis on retention and achievement rather than on merely enrolment.
- Strengthen the alternatives of schooling, particularly, the Non-Formal Education system for working children, girls and children from other disadvantaged or marginalised sections of the society.
- Shift focus from educationally backward States to educationally backward districts.
- Adopt disaggregated approach with a focus on preparation of district-specific and population-specific plans.
- Provide universal access to schooling facilities particularly to girls, disaggregated groups and out-of-school children.
- Introduce Minimum Levels of Learning for enhancement of learners' achievement-, micro planning would provide the framework of universal access and universal participation while MLLs would be the strategy for universal achievement.
- Improve school effectiveness, teacher competence, training and motivation.
- Decentralisation of planning and management through Panchayati Raj Institutions (PRIs)/ Village Education Committees (VECs) and stress on participative processes.
- Convergence of different schemes of elementary education and related services such as early childhood care and education and school health and nutrition programmes, etc.

India is one of the few developing countries which took initiative in 1991 to lay down Minimum Levels of Learning (MLLs) to be achieved at the primary stage. This new approach integrates various components of

curriculum, classroom translation, evaluation and teacher orientation. The first phase of the programme was implemented through 18 voluntary agencies, research institutions, SCERTs, etc. The results of these projects show significant improvement in learning attainments of school children.

It has now been decided to upscale the MLL programme through institutional mechanism throughout the country. The national resource institutions like the National Council of Educational Research and Training (NCERT), Regional Institutes of Education (RIEs), State Councils of Educational Research and Training and District Institutes of Education and Training are being networked for this purpose. Curriculum revision, re-writing of textbooks to make them competency-based, enhancing their pedagogical value, training of teachers in the classroom processes are major activities undertaken.

The State Governments have introduced MLL in most of their primary schools including local body/private schools. The District Primary Education Programme (DPEP) has adopted MLL as a major strategy for improvement of quality of primary education. Non-formal education programme is also adopting MLLs wherever appropriate. Learning competencies for various subjects taught at the upper primary stage are under consideration.

An innovative project called Lok Jumbish (People's Movement for Education for All) with assistance from the Swedish International Development Authority (SIDA) was undertaken in Rajasthan in 1992. The basic objective of the project is to achieve education for all through people's mobilisation and their participation.

Aims and objectives

- Providing access to primary education to all children up to 14 years of age.

- Ensuring that all enrolled children attend school/NFE centres regularly and complete primary education.
- Creating necessary structures, and setting in motion processes which would empower women and make education an instrument of women's equality.
- Pursuing the goal of equity in education. Making necessary modifications in the content and process of education to better relate it to the environment.
- Effectively involving people in the planning and management of education.

The project is implemented by the Lok Jumbish Parishad (LJP), an autonomous society registered under the Societies Registration Act.

The first phase of the project was implemented between 1 June 1992 and 30 June 1994 and incurred an expenditure of Rs 14.03 crore shared in the ratio 3:2: 1 among SIDA, the Government of India and the Government of Rajasthan.

The second phase of the project was implemented between 1994 and 1998 with a revised outlay of Rs 95.65 crore shared in the ratio 3:2:1 In this phase, the project covered 75 blocks.

The LJP has undertaken environment building activities in 5,683 villages and has completed school mapping exercises in 4,006 villages. Three hundred eighty-three new schools have been opened while 227 primary schools have been upgraded.

The Lok Jumbish Project has made a positive contribution to quality improvement through the development of improved MLL-based textbooks from Classes I-IV, which have been mainstreamed in all schools of the Government of Rajasthan. Lok Jumbish has also set up vibrant block and cluster resource groups for providing academic supervision and regular training of

primary school teachers. A renewed teacher training strategy in a cascade model is being implemented successfully.

An innovative and successful NFE programme launched by LJP has spread to more than 3,000 centres, called Sahaj Shiksha Centres. Catering to drop-outs and out-of school children, especially girls, the system has close linkages with the community and has shown to provide comparable learning achievement levels amongst students.

The LJP has been able to set up innovative management structures incorporating the principles of decentralisation and delegation of authority as well as build partnerships with local communities and the voluntary sector. Community mobilisation and school mapping exercises have shown good results and provide the bases for opening of new schools, Sahaj Shiksha Centres and community-centred building development programme.

Based on the Report of the Committee of State Education Ministers, a proposal to amend the Constitution of India to make Right to Free and Compulsory Education for children from 6 to 14 years of age a Fundamental Right and also to make it a Fundamental Duty of parents to provide opportunities for education to children in 6 to 14 years age group was considered and approved by the Cabinet at its meeting held on 16 May 1997.

In pursuance of the decision of the Cabinet, the Constitution (Eighty-third Amendment) Bill, 1997 was introduced in the Rajya Sabha on 28 July 1997. The Bill was examined by the Department related Parliament Standing Committee on Human Resource Development. The matter is being further examined in the light of the report of the Parliamentary Standing Committee. It is felt

that a wider public debate on the implications of the proposed legislation should be initiated.

In order to build up public opinion and mobilise social support, a national programme of media publicity and advocacy for universalisation of elementary education is proposed to be launched in the Ninth Five Year Plan.

The programme will focus on four groups, namely

- Teachers and all those involved in education of children
- Students and parents of students, particularly non-literate parents
- Community opinion builders
- Policy makers and public representatives

It is envisaged that the programme would facilitate social mobilisation and environment building for operationalising the proposal to make elementary education a Fundamental Right.

The National Elementary Education Mission (NEEM) is proposed to have the central objective of mobilising all the resources—human, financial and institutional—necessary for achieving the goal of Universalisation of Elementary Education. The setting up of the Mission is expected to give a boost to the efforts being made by the Government and nongovernmental organisations to achieve Universalisation of Elementary Education.

In pursuance of the NPE 1986, the scheme of Operation Blackboard (OB) was launched in 1987-88 with the aim of improving the human and physical resources available in the primary schools of the country existing as on, 30 September 1986. The scheme consisted of mainly three components:

- Provision of an additional teacher to single teacher primary schools.
- Providing at least two classrooms in each primary school.
- Providing teaching-learning equipment to all primary schools brought under the scheme. During the Eighth Plan, the scheme was revised in- 1993-94 and expanded to provide third classroom and third teacher to primary schools where enrolment exceeds 100 and extended to cover upper primary schools.

The scheme was intended to improve school publicity and advocacy for universalisation of environment, enhance retention and learning achievement of children by providing minimum essential facilities in all primary schools. Thus the scheme seeks to bring about both quantitative and qualitative improvement in primary education.

Hundred per cent central assistance is provided for appointment of an additional teacher in single teacher schools. Central assistance has been fully provided. The scheme is implemented through State Governments.

Construction of school building is the responsibility of the State Governments. However, in consultation with the Department of Education, the Ministry of Rural Areas and Employment has worked out a formula to make available the funds for construction of school buildings under Operation Blackboard scheme. According to this formula 48 per cent of the funds for construction are provided by the Ministry of Rural Areas and Employment under Jawahar Rozgar Yojana (JRY) if the States raise 40 per cent non-JRY and 12 per cent JRYs State share.

On the basis of past experience, observations of audit and evaluation reports it was observed that several

States have unutilised funds sanctioned for teaching learning equipment under OB scheme. As such it was felt that to a large extent the above mentioned situation can be attributed to lack of sufficient flexibility and decentralised procurement and supply of teaching-learning equipment.

While indicating broad categories of teaching-learning equipment to be procured, the specific items under each category were left entirely to the discretion of the State Government who could decide the items to be procured as per local conditions. The State Governments have also been advised that as far as possible, procurement of equipment should be decentralised and quality control scrupulously insisted upon. It was further suggested that involvement of representatives of Panchayati Raj Institutions, Village Education Committees and teachers/ headmasters in this process be ensured.

As envisaged in the National Policy on Education (NPE) and Programme of Action (POA) 1986, the Centrally Sponsored Scheme of Restructuring and Reorganisation of Teacher Education was taken up in 1987 to create a viable institutional infrastructure, academic and technical resource base for orientation, training and continuous upgradation of knowledge, competence and pedagogical skills of elementary school teachers in the country. The scheme envisages setting up of DIETs in each district to provide academic and resource support to elementary education teachers and non-formal and adult education instructors. It also envisages establishment of CTEs/IASEs to organise pre-service and in-service training for secondary teachers and provide extension and resource support services to secondary schools, IASEs are expected to conduct programmes for preparation of elementary teacher educators, conduct in-

service training for elementary and secondary teacher educators and principals of secondary schools, engage in advanced level fundamental and applied research especially of inter-disciplinary nature, and provide academic guidance to DIETs and support services to CTEs.

The scheme also envisages strengthening of SCERTs; orientation of primary teachers in the use of OB materials and implementation of MLL strategy with focus on teaching of languages, mathematics and environmental studies; and strengthening of Departments of Education in the universities through the UGC.

The Central Government provides financial assistance to States for setting up of DIETs/ CTEs/IASEs. DIETs are established by upgrading existing Elementary Teacher Education Institutions (ETELs) or by setting up new institutions. The land for the purpose is provided by State Governments free of cost. CTEs are set up by upgrading existing Secondary Teacher Education Institutions (STELs) offering B.Ed. courses, and IASEs by upgrading colleges and University Departments of Education offering M.Ed. courses.

DIETs have been playing an important role in the new educational initiatives like DPEP. These institutions have been identified as the principal technical and professional resource institutions in DPEP districts. The Department has recently advised State Governments to evolve appropriate mechanisms for effective coordination among SCERTs, DIETs and DPEP project authorities for convergence and synergy of governmental efforts and strategies focused on the achievement of universalisation of elementary education.

The Department has prepared a National Action Plan (NAP) in collaboration with UNESCO and International Telecommunication Union (ITU) to utilise the latest communication technologies for training of

teachers, teacher educators, educational supervisors and Panchayati Raj functionaries. The NAP would focus on integration of ongoing efforts under NCERT, DIETs and DPEP; capacity building; and mass training of above personnel at regular intervals without compromising on quality. It would also remove some of the weaknesses of the cascade model of face-to-face training of teachers. Interactive teleconferencing has been pilot tested for in-service training of 850 primary teachers in Karnataka and 1,450 teachers in Madhya Pradesh in 1996.

In the light of the experience gained and the feedback furnished by implementing agencies and State Governments, it is proposed to launch a pilot project during the year to test the application of interactive television in distance education with a coverage of 8,000 teachers in Gujarat and Madhya Pradesh. The progress of implementation of the scheme is being monitored through quarterly progress reports furnished by the States. Information received from States is analysed and they are suitably advised to take necessary action wherever warranted, for expediting construction of civil works, filling up of posts and organisation of pre-service and in-service training programmes for elementary school teachers. The pace and progress of implementation of the scheme was reviewed in the meeting of State Education Ministers and Secretaries held on 22-23 October 1998 at New Delhi. States were requested to take appropriate action to make all the DIETs fully operational as early as possible.

The task of assessing quantitative and qualitative progress made in implementation of the scheme has been assigned to NIEPA in 1997-98. The evaluation, which has been initiated, will also make a critical assessment of the performance of DIETs and recommend immediate and long-term measures needed for strengthening the capacity of these institutions.

The National Council for Teacher Education (NCTE) is responsible for achieving planned and co-ordinated development of the teacher education system throughout the country. It has initiated a process of consultation with the Principals of CTEs/IASEs/DIETs and Directors of SCERTs to understand various problems at the field level and suggest remedial steps for effective implementation of the Centrally Sponsored Scheme of Teacher Education. With this end in view, the NCTE has organised regional meetings of Principals of CTEs/IASEs and Directors of SCERTs. The NCTE has laid down norms and standards for pre-primary, elementary and secondary level teacher education institutions and for B.Ed. course through correspondence/distance education mode. Besides, a number of useful publications on teacher education have also been brought out by the NCTE.

The National Council for Teacher Education (NCTE) has been established as a national level statutory body by the Government of India vide its notification dated 17 August 1995. The main objectives of the Council are to achieve planned and co-ordinated development of the teacher education system, regulation and proper maintenance of norms and standards of teacher education. Some of the other major functions of the Council are laying down of norms for various teacher education courses, recognition of teacher education institutions, laying down of guidelines in respect of minimum qualification for appointment of teachers, surveys and studies, research and innovations, prevention of commercialisation of teacher education, etc. As per the provisions of the Act, four Regional Committees for the Northern, Southern, Eastern and Western Regions have been set up at Jaipur, Bangalore, Bhubaneswar and Bhopal, respectively. These Regional Committees consider the applications of the institutions of teacher education for recognition/permission in

accordance with the provisions of the Act. During the last three years, the Council has been in existence, it has laid down norms and standards for pre-primary, elementary and secondary teacher education institutions and for B.Ed correspondence/ distance education mode. Norms for M.Ed and some other specialised areas of teacher education like physical education and special education have been prepared.

On the basis of the recommendations of an Expert Committee, the NCTE has decided that education for the first degree/diploma should be through face-to face institutional course of teacher education of a minimum one year academic duration. The decision has been communicated to all the State Governments, Universities, Boards of Education, etc. However, with a view to provide avenues for professional growth of in-service teachers and to clear the backlog of untrained teachers in some regions of the country, B.Ed through correspondence/distance education is being continued on a limited scale. For this purpose, the NCTE has issued regulations laying down guidelines for the universities/institutions running B.Ed through correspondence/distance education.

The NCTE has published monographs, reports, self-learning modules for teacher educators and teachers, etc. Two documents on competency-based and commitment-oriented teacher education and nine units of self-learning modules on Human Rights and National Values have been brought out. The NCTE has organised two orientation programmes for elementary teacher educators in Science Education in Homi Bhabha Centre for Science Education, Mumbai.

Despite considerable expansion of formal system of education, the achievement of UEE goals remain a distant dream as a large group of children remain outside the

formal system due to various socio-economic constraints. In order to reach this large segment of marginalised children, the Department of Education has been running, since 1979-80, a programme of Non-Formal Education for children of 6-14 age group who remain outside the formal system due to various reasons. These include dropouts of the formal schools, children from habitations without schools, working children, children who assist in performing domestic chores like fetching fuel, fodder, water, attending to siblings, grazing cattle, etc. and girls who are unable to attend formal schools.

The National Policy on Education, 1986 and the Programme of Action 1992 envisage a large systematic programme of NFE for those who cannot attend the full day schools. It assumes that if the essential requirements for running a good programme are fulfilled, NFE can result in provision of education comparable in quality with formal schooling. It visualises NFE as child-centred, environment-oriented system to meet the diverse needs of comparatively deprived sections of society. Decentralised community participation through Village Education Committees (VECs) in planning, running, and overseeing the NFE programme has been considered crucial for its success.

Although the focus of the programme is on the educationally backward States, viz. Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Jammu and Kashmir, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal, it also covers urban slums, hilly, tribal and desert areas and projects for education of working children in other States/UTs as well. The programme at present, is in operation in 25 States/UTs.

The strategy of NFE is as follows:

— Condensed course of about two years' duration.

- Part-time instructions at a time/place convenient to learners in small groups.
- Part-time honorary instructor /supervisor locally recruited and trained.
- Emphasis on flexibility and decentralisation of management.
- Use of curriculum and teaching-learning material comparable to the formal system and relevant to local environment and learner's needs.
- Testing and certification of NFE students to enable their entry into formal system.

The programme is implemented through State/ UT Governments as well as NGOs. The Central assistance to States/UTs is being provided on sharing basis between the Central Government and the State Governments in the ratio of 60:40 for co-educational centres and administrative resource support and 90: 10 for exclusively girls' centres. Hundred per cent Central assistance is being provided to NGOs for running NFE Centres and Experimental and Innovative Projects.

The programme of NFE is being monitored through Quarterly Progress Reports (QPRs), periodic evaluations conducted by Joint Evaluation Teams (JETs) and field visits of Central and State Government officials. Moreover, seven external agencies evaluated the programme in eight States, viz. Andhra Pradesh, Bihar, Gujarat, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal. On the basis of the feedback received, remedial action is being taken for effective implementation of the programme. Operations Research Group (ORG), New Delhi has also been asked to develop tools for evaluation of the programme along with the schemes of Teacher Education and Operation Blackboard.

The emphasis during the Ninth Plan period would be on consolidation of the existing programme. Effort

will be made to improve the quality, allow greater flexibility, re-location of NFE centres on the basis of micro-planning, area survey and promote more experimentation and innovation in the field of elementary education. Development and scaling up of NFE models that can help the learners to learn at their own pace will be a major thrust area. The cost parameters are being revised to make the scheme more acceptable and in keeping with socio-economic realities of the day.

Currently, 740 voluntary agencies are implementing NFE programme in 25 States/ UTs. Another 85 agencies have been sanctioned 9,485 NFE centres in the current year.

The scheme is under revision during the Ninth Plan. Effort to make the programme more meaningful is being taken up and experiences of successful NFE programme of organisations such as Lok Jumbish, Shiksha Karmi, etc. are being taken into consideration while revising the scheme.

The overall aim of the scheme is to promote experimentation and innovation for the achievement of goals spelt out in the National Policy on Education. The scheme has been in operation from the year 1987-88. Under the scheme voluntary organisations are given 100 per cent grants for trying out innovative strategies that could be replicated/ disseminated in the formal stream. Main areas of experimentation and innovations have been: Action Research, Community Mobilisation, curriculum designing and preparation of need-based teaching-learning materials and aids, training of personnel and development of teaching techniques, new evaluation methods, linkage of school education with vocational education and alternative method of education for special target groups such as, disabled children, girls, working children, tribal children, etc.

Currently, 45 voluntary agencies are implementing the programme. Some of the leading agencies are MV Foundation, Secunderabad working on education of child labour, Deccan Development. Society working on vocational skills with scholastic studies, Agramamee, Orissa, working on education of tribal children and Eklavya, Bhopal, working on preparation of need-based teaching materials.

The National Bal Bhavan (formerly Bal Bhavan Society India), New Delhi was established by the Government of India in 1956 at the initiative of Pandit Jawahar Lal Nehru. An autonomous institution fully funded by the Department of Education, the National Bal Bhavan (NBB) has been contributing towards enhancing the creativity amongst children in the age-group 5-16 years especially from the weaker sections of the society. The children can pursue activities of their choice such as creative arts, performing arts, environment, astronomy, photography, integrated activities, physical activities, science-related activities, etc. in a joyful manner. The programmes are so designed as to explore the inner potential of a child and give him opportunities for expression of ideas through various media. Bal Bhavan thus aims at the all-round growth of a child in a free and happy atmosphere and helps them develop a scientific temper.

This year also summer programmes were organised by the National Bal Bhavan for the children wherein workshops on craft conservation, creative art, development of low-cost science games, models/toys, screen printing, videography, food preservation, mathematics and science through origami, photography and aero modelling, etc. were arranged. A joint action programme of National Bal Bhavan and Centre for Environment Education on 'Building up Energies' for the teachers was organised in the month of April 1998. The

Ambassador of Egypt in India distributed prizes to the winners of painting competition on 'Egypt in the Eyes of the Children of the World' in May 1998.

Computer awareness programme, launching of a newspaper entitled Akkar-Bakkar Times by the children, organising literary camp, integrated environment projects and a workshop on how to make their own aquarium and how to maintain it are some of the other important activities undertaken during the year. The World Habitat Day was observed during September 1998.

National Bal Bhavan organised National Children's Assembly and Integration Camp 'Panchtatva' from 14 to 20 November 1998, which was inaugurated by the Hon'ble Prime Minister of India Shri Atal Bihari Vajpayee and the inaugural function was presided over by the Hon'ble Minister of Human Resource Development, Shri Murli Manohar Joshi.

The programme of Nutritional Support to Primary Education, popularly known as the Mid-day Meals Scheme, was launched on 15 August 1995 on a nationwide scale. This programme intends to give a boost to the universalisation of primary education by increasing enrolment, retention and attendance and to improve the nutritional status of students in, the primary classes (I-V).

From 1997-98 onwards, the programme has covered all the children studying in primary classes in the Government, local body and government-aided schools. This is one of the largest school nutrition programmes in the world today.

The total number of beneficiaries at present being covered is estimated to be 9.75 crore in nearly 6.88 lakh schools in all the blocks and urban areas in the country. The programme is much successful wherein cooked meals/processed food is being served:

The Central support under this programme is on:

- Provision of foodgrains free of cost to the implementing agencies for which economic cost is reimbursed to the Food Corporation of India.
- Reimbursement of transportation cost to district authorities for moving foodgrains from Food Corporation of India godowns to schools /villages.

Shiksha Karmi Project (SKP) was launched in 1987 on the basis of agreement signed between Swedish International Development Cooperation Agency (SIDA) and the Government of India. Phase I of the project was up to 30 June 1994. According to the specific agreement between the Government of India and the Government of Sweden, Phase II of the SKP was up to June 1997 which was subsequently extended to June 1998. During Phase I, SIDA and the Government of Rajasthan shared expenditure in the ratio of 9:1, respectively. During Phase II the cost-sharing between SIDA and the Government of Rajasthan was revised in the proportion of 50:50. Provision for the SIDA's share has been made in the Central Plan Budget which was subsequently reimbursable by SIDA on the basis of actual expenditure incurred by the Rajasthan Shiksha Karmi Board (RSKB) through which the Shiksha Karmi Project is being implemented.

The project aims at universalisation and qualitative improvement of primary education in remote and socio-economically backward villages in Rajasthan with primary attention given to girls. The project identifies teacher absenteeism as a major obstacle in achieving the goal of Universalisation of Elementary Education (UEE). It was realised that a primary school in remote villages, with the teacher not residing there, often tended to become dysfunctional, and parents as well as children failed to relate to such an institution, leading to high

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dropout rates. Under SKP, regular teachers are replaced by local teachers who are less qualified but specially trained. A Shiksha Karmi (SK) is a local person with minimum educational qualification of Class VIII for men and Class V for women. To overcome the basic lack of qualification, Shiksha Karmis are given intensive training through induction programme as well as periodic refresher courses. The project is being implemented by the Government of Rajasthan through Rajasthan Shiksha Karmi Board (RSKB) with the assistance of voluntary agencies. The RSKB has a Governing Council and an Executive Council. These bodies are represented through two representatives of this Department.

Non-Governmental Organisations (NGOs) and the community play a pivotal role in the implementation of the Shiksha Karmi Project. The Village Education Committees (VECs) have contributed to the improvement of school environment, augmentation of infrastructure and facilities, larger enrolment of children through school mapping and micro-planning in the Shiksha Karmi schools. Enrolment of girls, their attendance and retention in primary schools is one of the serious challenges in achieving Universalisation of Elementary Education in Rajasthan. The SKP aims at addressing these through decentralised initiatives involving the community. At the grassroot level, Panchayat Samities, Shiksha Karmi Sahyogis, subject specialists of NGOs, Shiksha Karmis and the village community constantly interact with each other to achieve the aims of the project.

Prehar Pathshalas (PPs) (school of convenient timings) under the SKP provide educational programmes for out-of-school children who cannot attend regular day schools due to their preoccupation at home and in other work. In PPs condensed formal school curriculum and learning materials are followed. At present 22,359 girls

who constitute 71 per cent of learners in PPs are benefiting from this facility.

Under the innovative and experimental activities, Angan Pathshalas have proved effective in attracting girls to primary schools. Mahila Sahyogis have confirmed their utility in motivating girls to attend schools/PPs in difficult areas. Integration of children with partial disabilities in day schools and PPs have been attempted on a pilot basis.

There is an in-built monitoring process at village, block, headquarter and state levels. There is a provision of Joint Biannual Reviews by SIDA, the Government of India and the Government of Rajasthan and independent evaluation by teams consisting of national and international experts. It has been the practice to conduct mid-term review/evaluation through extensive field trips, meetings, discussions and interactions with all functionaries and beneficiaries. Expert studies have revealed that academic attainments of primary school children in SKP areas are generally better than neighbouring schools managed by Panchayati Raj Institutions. The Shiksha Karmi Project has emerged as a unique instrument of human resource development.

It has enabled rural youth with inherent talent and potential to blossom into confident para-professionals with self-respect and dignity. There has been six-fold increase in the enrolment of children in the schools taken over by the project. A significant number of children covered by the SK schools are from among SCs/STs.

The project now covers 2,697 villages in 146 blocks in Rajasthan. 6,285 Shiksha Karmis provide primary education to 2.01 lakh children in day schools and PPs. The experience of SKP demonstrates that the motivation of Shiksha Karmis working in difficult conditions can be sustained over a long period of time by recurrent and

effective training; sensitive nurturing, community support, regular participatory review; and problem solving. The success of SKP has attracted national and international recognition. The second phase of Shiksha Karmi Project has come to an end on 30 June 1998. The project document for the third phase is already with prospective donors, viz SIDA and DFID.

The District Primary Education Programme (DPEP) is a Centrally Sponsored Programme providing special thrust to achieve Universalisation of Primary Education (UPE).

The programme takes a holistic view of primary education development and seeks to operationalise the strategy of UPE through district-specific planning with emphasis on decentralised management, participatory processes, empowerment and capacity building at all levels. The programme is structured to provide additional inputs over and above the provision made by the State Governments for expenditure on elementary education. The programme fills in the existing gaps in the development of primary education and seeks to revitalise the existing system. The DPEP is contextual and has a marked gender focus. The programme components include construction of classrooms and new schools, opening of Non-formal/ Alternative Schooling Centres, appointment of new teachers, setting up of Block Resource Centres/Cluster Resource Centres, teacher training, development of teaching- learning material, research-based interventions, special interventions for education of girls, SC/ST, etc. The components of integrated education to children with disability and a distance education component for improving teacher training have also been incorporated in the programme.

The programme mainly aims at providing access to primary education for all children, reducing primary

dropout rates to less than 10 per cent, increasing learning achievement of primary school students by atleast 25 per cent, and reducing the gap among gender and social groups to less than 5 per cent.

The district is the Unit of programme implementation and selected on the basis of twin criteria, viz. (a) educationally backward districts with female literacy below the national average, and (b) districts where Total Literacy Campaigns (TLCs) have been successful, leading to enhanced demand for elementary education.

The DPEP is a Centrally Sponsored Scheme. Eighty-five per cent of the project cost is shared by the Government of India and 15 per cent by State Government. Both the Central share and State share are passed on to State Implementation Societies directly as grant. The Government of India share is resourced by external funding.

Several bilateral and multilateral agencies are providing financial assistance for the DPEP. The World Bank has provided a credit amounting to US\$ 260 million (approx. Rs 806 crores) under Phase I of DPEP (1994-2001). The European community has signed a financial agreement with the Government of India to provide a grant of 150 million ECU (approx. Rs 585 crores) as programme support for DPEP in Madhya Pradesh (1994-99). An agreement has been signed with International Development Agency (IDA) for a second credit amounting to US\$425 million DPEP (1996-2002). The Government of Netherlands has provided a grant of US\$ 25.8 million for DPEP in Gujarat. A grant of £42.5 million (Rs 220 crores) for DPEP in Andhra Pradesh and £31.7 million (Rs, 207 crores) for DPEP in West Bengal is available from Overseas Development Agency (ODA) (UK). IDA credit of US\$ 152.4 million (Rs 530 crores) and

a grant of US\$ 10 million (Rs 36 crores) from UNICEF has been tied up for Phase III for DPEP in 27 Educational Districts of Bihar.

The programme which was initially launched in 1994 in 42 districts of seven States has now been extended to cover 149 districts of 14 States, viz. Assam, Haryana, Karnataka, Kerala, Maharashtra, Tamil Nadu, Madhya Pradesh, Gujarat, Himachal Pradesh, Orissa, Andhra Pradesh, West Bengal, Uttar Pradesh and Bihar.

The first in-depth review conducted during September -October 1997 and the subsequent reviews have brought out that improvements are proceeding in the right direction and there are significant gains in access and retention. There has been a spurt in enrolment and increase in learning achievements. Increasing community involvement, improvement in classroom processes and concerted equity focus have emerged as key successes of the programme.

4

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The uniqueness of the literacy campaign lies in the fact that it is delivered through voluntarism. Literacy campaigns are implemented by the Zilla Saksharata Samitis (ZSSs) which create a fusion between the district administration headed by the Collector on the one hand, and volunteer groups, panchayats, and social activists on the other. The literacy campaigns are implemented by funding ZSSs through the Central and State Governments in the ratio of 2:1 (4:1 for districts in the Tribal Sub-Plan areas). The initiation of the TLC begins with the process of consultation and consensus involving political parties, teachers and cultural groups.

This gives rise to the organisational structure of the Zila Saksharta Samiti. The Zila Saksharta Samiti conducts a survey to identify the nonliterate population as well as the potential volunteer teachers. Mass mobilisation takes place during the literacy campaigns through a multi-faceted communication strategy which includes Kala Jathas, Nukkad Nataks, wall writings, Padyatras, literacy songs, posters, banners, etc. Locally relevant teaching-learning materials are developed using an innovative pedagogy called Improved Pace and Content of Learning (IPCL). Primer-specific training is imparted to trainers in the literacy campaigns. The environment building activities as well as monitoring and supervision continues throughout the actual teaching-learning process which takes 200 hours and is spread over a period of 26 to

9 months. Monitoring and supervision of Total Literacy Campaigns (TLCs) is done through a periodic system of reporting as well as through concurrent and external evaluations which are conducted by evaluation agencies identified by State Directorates of Adult Education and the NLM.

The Total Literacy Campaign is followed by the Post Literacy Campaign which aims to consolidate the gains accrued during the basic literacy stage. It also takes care of the dropouts and left-outs of the Total Literacy Campaigns through a process of mopping up. It is during the post-literacy stage that convergence with other development programmes, and skill upgradation of neo-literates is sought.

So far 450 districts have been covered under TLC in the States of Andhra Pradesh, Assam, Bihar, Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Maharashtra, Madhya Pradesh and West Bengal and Union Territories of Chandigarh, Daman & Diu, Dadra and Nagar Haveli and Pondicherry. Of these, 250 campaign's have moved into Post-Literacy and 65 to the Continuing Education stage.

The campaigns cover an estimated 148 million persons, among whom 121 million learners were identified through survey. Of the 94 million persons enrolled, 72.55 million persons have been made literate (learners having completed level III) so far.

Keeping in view the way the Mission has moved, the following new strategies have evolved:

- Preparation of time-bound action plans for TLC coverage of uncovered districts in the States of Bihar, Punjab, Jammu & Kashmir and north-eastern States.
- Non-cash incentives for motivating volunteers so as not to defeat their spirit.

- Instituting linkages between literacy campaigns and Panchayati Raj Institutions. Linking literacy schemes and other development programmes.
- Regular and systematic monitoring by holding state-level monthly meetings.
- Compilation and dissemination of accurate field-level data.
- Concurrent and final evaluations of campaigns by independent social research agencies with proven track record.
- Decentralisation and delegation of authority for implementation of literacy programmes to State governments by establishing State Literacy Mission Authorities (SLMAs).
- Strengthening State Directorates of Adult Education to act as nodal agencies of monitoring and evaluation.
- Augmenting State Resource Centres (SRCs) for providing improved techno-pedagogic and training support to literacy programmes.

The scheme of Shramik Vidyapeeths (SVPs) is a programme of Polyvalent (multi-faceted) Adult Education for workers and their family members in urban and industrial areas. The programme was evolved to respond to educational and vocational training needs of numerous groups of adults and young people living in urban and industrial areas and for persons who have been migrating from rural to urban settings.

The first Shramik Vidyapeeth was established in Mumbai (Worli) in the year 1967 and gradually the number of Vidyapeeths has increased to 58 in 16 States and 1 Union Territory in 1997.

Hitherto, the scheme of SVP has been restricted to urban/ semi-urban areas. During the Ninth Five Year Plan period the scheme will expand its area of operation.

In the changed scenario, the main task of SVP will be to act as district level resource support agency, especially, in regard to organisation of vocational training and skill development programmes for the neo-literates and other target groups under the scheme of Continuing Education for neo-literates.

The Shramik Vidyapeeths are registered under the Societies Registration Act 1860 with its own Memorandum of Association and Rules and Regulations.

Annual assistance to the extent of Rs 12.30 lakh to Shramik Vidyapeeths that have completed five years and Rs 8.00 lakh along with one time grant of Rs 3.00 lakh to those that are yet to complete five years is given by the Ministry of Human Resource Development, Department of Education. The grant is likely to be increased substantially during the Ninth Five Year Plan to help strengthen their infrastructure.

Shramik Vidyapeeths offer around 225 different vocational training programmes right from candle and agarbatti making to computer courses.

The National Literacy Resource Centre (NLRC) was set up by the NLM at the Lal Bahadur Shastri Academy of Administration, Mussoorie. The most important activity of the NLRC is to organise training and orientation workshops for District Mission leaders and various district functionaries of Zilla Saksharata Samitis and Panchayati Raj Institutions, apart from preparing various case studies and video documentations. After the initial period of two years, the Centre at Mussoorie has been approved for a period of five years from 1998-99 to 2000-2003.

In the years 1997-98, NLRC organised training workshops for various functionaries of Uttar Pradesh, Rajasthan, Haryana and Madhya Pradesh. In addition,

regional workshops for preparing training materials have also been organised at Chennai (Tamil Nadu) and Dumka (Bihar). The NLRC continues to build human resources for literacy promotion.

Continuing Education is perceived as an indispensable aspect of the strategy of human resource development and of the goal of creation of learning society. Continuing Education provides a second chance to those deprived section of the society who missed formal education.

The scheme of Continuing Education is being implemented since 1996-97. Around 62 Districts spreading in 12 States and 1 Union Territory have been covered till December 1998 under the scheme. Around 38,000 Continuing Education Centres and 4,800 nodal Continuing Education Centres are being set up in these Districts. The Continuing Education Centre serves as the focal point for providing learning opportunities such as literacy classes, library, reading room, learning centre, training centre, cultural centre, sport centre and other individual interest promotion programme centres.

The scheme of Continuing Education also provides the opportunity to undertake diverse activities involving alternative and innovative approaches to cater to the need of the learners.

Taking into account the local conditions and the resource availability, various target-specific activities such as Equivalency Programmes (EPs), Quality of Life Improvement Programmes (QLIPs), Income Generating Programmes (IGPs) and Individual Interest Promotion Programmes (IIPPs) are also organised for specific groups of beneficiaries. The programme of continuing education is being implemented under the aegis of Zilla Saksharata Samiti. Zilla Saksharata Samitis along with Districts, Blocks and Gram Panchayat Level Committees are

responsible for overseeing the programme in the entire district. Component of flexibility in implementation strategy, sustainable of the programme in the long run, community participation, non-duplication efforts and integration of development activities are broader approaches on which the Continuing Education Programme is being implemented.

The scheme of Strengthening of Administrative Structure (SAS) was introduced in 1978-79 to create necessary supportive administrative structures at the State, Union Territory and District levels for implementing adult education programmes. In the scheme of SAS the Central Government bore the financial burden of the sanctioned posts in the States and UTs. Seed money was also provided to six State Literacy Mission Authorities (SLMAs) for strengthening of their infrastructure.

During the current year financial allocation of Rs 4.67 crores were released against committed liabilities of previous years to nine States/UTs (Himachal Pradesh, Karnataka, MP, Maharashtra, Manipur, UP, Andaman & Nicobar Islands), The Central assistance under the scheme of SAS has been discontinued after 31 March 1998. The State Governments and Union Territories are expected to bear the financial burden from their own sources.

Launched in 1978 as the main Centrally Sponsored Scheme under the National Adult Education Programme (NAEP), Rural Functional Literacy Project (RFLP) was to cover 100 million non-literates in five years. The strengths of RFLP were high participation of women and weaker sections, and production of good quality teaching and learning materials. However, reviews indicated that RFLP in its original form did not have the expected impact. A revised RFLP was initiated to be implemented

during the Eighth Five Year Plan in Jammu & Kashmir, Sikkim, the North Eastern States, border districts of Rajasthan, and Dadra & Nagar Haveli. Today the scheme is operational in Jammu & Kashmir, States of the North-East and Sikkim.

During the year under report voluntary agencies continued to implement total and post literacy projects. Fresh total literacy projects were funded in North East (Manipur) and J&K.

With the sanctioning of Continuing Education projects to more than 60 districts in thirteen States in the country, focus has been on changing techno-pedagogic needs for these programmes.

A Regional Workshop on Role of Resource Centres in Continuing Education was organised in Hyderabad from 15 to 17 June 1998. The workshop deliberated on:

- Strategy and Policy formulation of Project Proposal of CE
- Redesigning training for new requirements
- Development of materials
- Methodology and format of Monitoring and
- Evaluation
- Training of staff of Resource Centres.

The Resource Centres during this year have taken up projects in their annual action plan to establish at least one nodal Continuing Education Centre in the area of jurisdiction. These centres will become the models for implementation of the CE scheme at a larger scale.

Four Voluntary agencies have been involved in the project 'Training and Cooperation Literacy in India-Plan of Operation' executed jointly by the National Literacy Mission and the UNESCO. The studies undertaken were

- The implementation of literacy and continuing education activities for out-of school girls and women.
- Improving the training of literacy personnel and their social status in the context of literacy work.
- The role of social mobilisation for literacy through decentralisation and community involvement.

The Directorate of Adult Education (DAE), a subordinate office of the Department of Education has been functioning as the national resource centre for adult education and literacy programmes in the country. It is the functional arm of the National Literacy Mission which is responsible for monitoring and evaluation of various schemes launched under the aegis of NLM. The highlights of various units of the DAE during the year 1997-98 are as under.

The Monitoring Unit maintained a close look at the literacy campaigns launched in about 450 districts spread over 26 States and UTs through its Management Information System. The receipt of monthly reports in the prescribed formats developed by DAE from various States were ensured and based on these reports periodical and annual reports for the use of planners, administrators and policy makers in various levels were generated. The Unit has been developed as a data bank relating to all relevant information about basic literacy, post-literacy and continuing education in the country.

The Evaluation Unit received 19 concurrent evaluation and 49 final evaluation reports of the TLCs during the year which were critically examined and follow-up action taken to streamline the campaigns. The Unit also prepared the guidelines for mid-term and final evaluation of post-literacy programmes through a series of regional and national workshops and circulated these guidelines amongst all concerned. The Unit organised

two orientation workshops for the empanelled evaluating agencies in which representatives of NLM, State DAE and SRCs and RRCs participated. It also organised two workshops on identifying the priority areas in research in the field of adult education.

The Materials Unit brought out the policy guidelines on production, selection and purchase of neo-literate materials for continuing education centres. It also finalised a set of Improved Pace and Content of Learning (IPCL) primers for industrial workers under the scheme 'Literacy in Workplace'. Two regional workshops for orientation of writers in designing IPCL primers and preparation of sample materials in languages and tribal dialects of North East States including Nepali, Limba, Lipcha, Bhutia and 16 tribal dialects of Manipur were organised during the year. Four regional workshops, including two for Urdu language, were also organised to orient the writers in the art of designing neo-literate materials.

The Media Unit undertook 19 new productions with 137 episodes in different languages through different producers. Intensive media campaign on literacy was also launched through telecast of literacy spots over Doordarshan, twice a week telecast of literacy programmes of Doordarshan and through Closed Circuit TV (CCTV) at selected railway stations throughout the country. One of the video productions of DAE titled Manoj Ki Kahani won a prize at the Eighth Audio Visual festival held at Hyderabad.

The Publications Unit brought out more than 20 publications related to literacy. These included the prestigious publication A Decade of Literacy published on the occasion of the International Literacy Day on 8 September 1998 by the SRC, Delhi on behalf of the National Literacy Mission and the UNESCO. It also

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produced another prestigious publication entitled Outreach in collaboration with the Indian Navy, Ministry of Social Justice and Empowerment and Confederation of Indian Industries which was released by the Hon'ble Prime Minister of India on the occasion of Navy Day on 4 December 1998. Besides this, the Unit also assisted in producing hundreds of reports generated through various workshops and seminars organised by the NLM and the DAE during the year. It was instrumental in putting up an impressive display exhibition on literacy on the social development fair at Pragati Maidan, New Delhi.

The Urban Unit of the Directorate finalised the new, guidelines for the Shramik Vidyapeeths renamed as Jana Sikshan Sansthan (Institute of People's Education) keeping in view their enhanced role in the Ninth Five Year Plan. While providing guidance to the 58 Shramik Vidyapeeths now under operation in various parts of the country, it also conducted feasibility study with six voluntary agencies which have applied for establishing Shramik Vidyapeeths. The Unit prepared a report titled 'Facts at a Glance' containing the details of the achievements of SVPs during the Eighth Five Year Plan and also the annual report for SVPs for the year 1997-98.

The Directorate is implementing the UNFPA-funded 'Population Education Project in Adult Literacy' through the technical resource support of 21 States and Regional Resource Centres across the country. During the year 1997-98, the third phase of the project has begun which aims at infusing population and development education in post-literacy and continuing education.

The Unit commissioned four evaluation/impact studies on population and development education and received final reports which have been circulated amongst SRCs, RRCs, Ministry of Health and Family

Welfare and UNFPA, etc. It also conducted two inter-state comparative studies. A three-day orientation programme on population education was organised for the Director and Programme Officers of SRCs and RRCs at Bhubaneswar while two national level workshops were held at Hyderabad and Jaipur. The Directorate prepared a directory of publications developed and produced by SRC. Regional workshops on continuing education were organised at Chennai, Hyderabad and Udaipur while a five-day orientation programme of training of trainers of SRCs was held at Pune.

Statements about 'the skill demands of new technology' and 'skilling for the national interest' are now starting points from which policy is developed. This 'language of skills', which has assumed different formulations in different times, has largely been translated uncritically into educational policy, usually without clarification. It has provided the rationale for state and federal governments' restructuring of tertiary education, post-compulsory school reorganization as well as curriculum and assessment reform.

While intended to link education more closely to the economy and the labour market, this reorganization of school and work is also couched in terms of equity and fairness 'as preserving and extending the national commitment to democracy and social justice'. Skilling (through education, training and specific skill programmes, e.g., Skillshare) is therefore rhetorically linked to improving the Position of the traditionally, disadvantaged (working class, rural, Aboriginal and female students). The 'language of skills' of the 1980s is based on a number of assumptions. First that Australia is moving into a Post-industrial society which, in turn, requires a new type of productive worker who is 'flexible', 'adaptable' and 'multi-skilled'. In a 'Post-industrial society', it is assumed that there has been a

shift a way' from the Fordist organization of work which accompanied industrialization. Fordism is characterized by a vertical and hierarchical organization of work, distinguishing between management and labour on the basis of the separation of the conception from the execution of labour power. This strict division of labour permeates the organization, with a high degree of specialization and routinized labour. Post-Fordism' by contrast, is premised on the view that quality, innovation and production control can best be handled by front-line producers and not centralized managers.

Post-Fordism emphasizes decentralization support teams and localized decision making' The emphasis is not on top-down control but on horizontal communication between relatively autonomous production units which can, because of their flexibility and adaptability, meet the needs of the consumers better. The post-Fordist worker must therefore be an adaptable, innovative problem solver Possessing a package of generic skills which are transferable across different worksites.

Different views of skill implicit in the Fordist or non-Fordist perspectives, therefore, carry with them differing implications about how education should prepare youth for work and further training for adults. Second, the 'language of skills' tends to assume a technologically progressivist and determinist stance. It is progressivist in that technology is presumed to bring positive benefits to society in general in that it requires a higher level of technological sophistication and expertise from all members of society. It is determinist in that it assumes that technology 'determines' the way in which work is organized. That is, skills are technically defined, rather than the position that technology, as skill, is socially constructed in ways which suit particular interests, whether it be male labour or capital. Third, while education and training focus on individualized

skills there is the assumption that skilling the 'individual will have national benefits through aggregation.

Since 1987, the notion of skills has been central to the arguments about education making Australia more productive and competitive internationally through 'restructuring' as laid down in Australia Reconstructed. This involves changes in the workplace regarding both the roles and skill requirements of workers and is critical to the renegotiation of wages awards. New awards in the 'education industry' link productivity gains to the upgrading of skills with the creation of the Advanced Skills Teacher.

The assumption is that there is a direct link between credentials and skilling, between individual skills and national productivity. More people it is argued, are gaining higher credentials in order to meet the demands of more skilled occupations, although it is more likely that the credentialing spiral is a consequence of scarcity of educational places and jobs. The language and logic of 'skilling' is a particularly well-articulated strand of the discourse of vocationalism which has been loudly articulated in various Periods of economic and social dislocation in Australia and other western welfare capitalist states during the 20th century. This discourse has invariably linked schools to work at the macro level in a more instrumental, economically functional manner.

As a set of organized systematic meaning represented through state Policy, the media education- and which become part of common sense- the *discourse of vocationalism* shapes everyday practices, it encourages certain Possibilities and limits others by defining concepts in particular ways. For example, at the macro level, during each of the economic recessions of the 1890s, 1930s and 1970s, education was initially blamed for its failure to prepare Youth adequately for work both

attitudinally and skillwise. Yet there emerged in the latter phases of each economic downturn the view that education could also provide a solution for the economic ills of the nation through the upgrading of the skills of youth.

The tension over whether education is the problem or the solution has in some instances led to a shift away from the general notion of 'education for citizenship' (usually associated with liberal education) during the prosperous 1950s and 1960s towards an instrumental and economic view of education serving the economy through the development of individualized skills in the 1980s. What differs in each of these periods is the extent to which the state has been prepared to intervene and, more specifically, to fund the 'upgrading' of the skill of the individual, specific groups or the population at large, although the state has been active in contributing to the discourse.

At the micro level, whilst skill definitions shape in concrete ways the experiences and opportunities of specific groups of youth, the language of skill utilized in the policy discourse tends to use the term in a universal and all-inclusive manner to include a range of activities, from using a cash register to using a lathe. This lack of clarity is in part due to uncertainty as to actual technical skill requirements arising from rapid changes in the labour process as well as the gap between policy and what actually occurs in practice. But the universal claims of the skilling thesis at the macro level also obscure the political and social aspects of skill—about who acquires what skills and to whose benefit—and thus serves an ideological function. This ideological aspect is critical at times of scarcity of educational places and employment due to the social selection function of credentials (which supposedly signify skills). Debates which tend to focus on the vocational function of education (and how it

should respond to the skill demands of the workplace) are really about who is taught what curriculum, how and by whom. Invariably vocational education is seen to be the lesser alternative to the hegemonic academic curriculum, an alternative which targets 'disadvantaged' or 'at risk' groups. This article, which is informed by a larger historical and empirical study, looks at the notion of skill as it has altered since the late 19th century; of how, as a major element of the wider discourse of vocationalism, historically and gender-specific notions of skill were produced and maintained as 'givens'. Whereas vocationalization tends to in(an the formal linking of education to work (apprenticeship, vocational and career guidance, work education), the discourse of vocationalism refers to how the education-work relationship is discursively constituted in ways which shape the activities of individuals and social groups.

In the article, first critique from a feminist perspective two dominant theoretical frameworks, that of human capital and labour process theory, because of their emphasis on skill and the implications this has for education. Second, illustrate how, despite the common elements which are present in the discourse of vocationalism (to 'upgrade the skills of school leavers' and to make the curriculum 'more vocationally relevant') there are important differences in what is meant by key concepts such as 'skills' and 'vocational' in specific historical contexts, differences premised on how work is seen to be organized, on different perceptions as to the 'needs' of the nation and the 'needs' of the individual according to their class and gender. In turn these presume particular notions of the learner and the worker.

Finally, how the language of skills is framing the reshaping of secondary and tertiary education since the mid-1980s, with particular reference to the implications of this for women and girls. Despite the post-Fordist

rhetoric, government reports on labour markets, the economy and education still carry with them many common-sense 'Fordist' assumptions about the nature of skills: that skills are concrete, can be readily categorized, are technically defined and neutral .

Two opposing theoretical frameworks have tended to dominate the ways in which the education-work nexus has been conceptualized-human capital theory derived from mainstream neo-classical economics and labour process theory derived from Marxism. In each the notion of skill has been central. 'Human capital' theory has tended to dominate the official view of the school-work link during the 20th century. It presumes an instrumental view of the relationship between school and work.

At a macro level, human capital theory assumes an essentially structuralist-functionalist view of the education-society relationship. It presumes a direct, linear and positive correlation between education and technology, education and individual productivity, education and national economic productivity. At the micro level, the model can be summarized thus: education is an investment which benefits both the individual (and the nation) in that education proportionally increases the potential for individual effort (productive work) and the economic rewards gained from this effort. Individual gain is then aggregated to produce national productivity. Education is viewed as an investment, a matter of individual choice, Skills acquired through education are transferable to work.

Educational credentials indicate the level and nature of these skills. The individual is rewarded in proportion to the amount of that investment in education as signified by credentials. The longer one invests in education, the greater the economic rewards. In this model, women's lower economic rewards are a

consequence of individual 'choice' not to invest in longer periods of training as they give priority to their family responsibilities rather than due to discrimination or structured disadvantage. But the human capital model which has increasingly informed educational policy is empirically and historically inaccurate as a depiction of the choices, options and experiences available to many men, largely working class and/or non-Anglo Celtic, and most women.

The emphasis on the labour market and the role of education in supplying labour-market needs assumes, first, that there is a labour market in which individuals freely compete on the basis of their skills as signified by the educational credentials they possess. Second, human capital theory argues that discrimination by employers on the basis of gender, race or class is 'irrational' because unprofitable, as the most qualified candidate would not necessarily be employed. That is there is a direct correlation between the level of education and life chances. Third, the mechanism of the labour market, it is argued, is neutral.

Criticisms of human capital theory have focused first on the failure to recognize the screening, symbolic and cultural value of credentials, which undermines any notion of them as neutral mechanisms of fair selection; second, on the fact that the problem is as much one of demand as of supply; and, third, that human capital theory has ignored the sexual division of labour as central to the workings of the labour market and of capital itself. Indeed, labour-market research has indicated that girls and women, who are more successful educationally and whose work is often more cognitively complex, do not achieve the same economic rewards and promotional opportunities as their male counterparts with equivalent qualifications a factor exacerbated by

labour-market segmentation and employer discrimination. The major critique of this 'skilling thesis' has been undertaken by labour process theorists, initiated largely by the work of Harry Braverman in *Labour and Monopoly Capital* 1974. Braverman argued that, despite the demand for higher education qualifications in general, close historical analysis suggested that technology had in fact led to a general *trend* of deskilling or dispossession of 'the mass of workers from the realms of science, knowledge and skill' since 1900 whilst at the same time increasing the specialization and skills of a small segment of the work-force, the managers and technicians.

Moreover, he argued that this polarization between those who conceived the organization of work and technology and those who executed these plans on the workshop floor facilitated the process of accumulation of wealth by the few, generally white male middle-class professionals. Certainly, labour-market research has supported some aspects of Braverman's account. Future labour-market demands in the USA, UK and Australia suggest the increasing polarization of labour between the majority of workers, most of them women, being concentrated in increasingly semi-skilled or unskilled labour and a minority of 'highly skilled' technicians, professionals and managers, usually male. Australian research indicates that the demand for skilled workers, particularly in hi-tech industries and engineering, is not as great or universal as the skilling thesis claims.

Employment trends indicate that the greatest area of expansion in employment is in casual and part-time labour for women in jobs not requiring skills or an upgrade in skills, in what could be described as Fordist work organization in which there is little worker autonomy and more repetitive work. This deskilling is also evident in the peripheral labour markets facilitating

more 'flexible manufacturing'. Both Braverman's deskilling hypothesis and labour process theory, as well as human capital theory, have been criticized for their claims of universality and determinism. The proliferation of empirical and historical evidence arising from Braverman's publications suggests that the processes of 'deskilling' and 'reskilling' often occur simultaneously, affecting individuals, worksites and social groups differently and often in contradictory ways. The major points of the critique revolve around Braverman's romantic view of labour, his neglect of class consciousness, his neglect of valorisation, his neglect of gender issues, his neglect of trade union resistance, his failure to see the possibility of reskilling and hyperskilling-indeed his poor conception of skill itself-his over emphasis on Taylorism and de-emphasis on other forms of job design and his universalistic view of the de-skilling process.

Added to this could be the failure to recognize other 'hegemonic' regimes which elicit workers' consent. Braverman's definition of skill is equally limited because it is tuned to the ~craftsman' and is wary of 'relativist' definitions. Feminists, meanwhile, have critiqued human capital and labour process theory for their assumptions as to the universality of the white middle-class male experience. In particular human capital theorists and psychologists look at skill as the objective property of the worker which can be measured, what Attewell calls the positivist approach to skill.

Feminist critiques draw largely from the social constructivist approach to skill which suggests that skill is socially and historically constructed in ways which favour particular individuals and social groups. 'Skill' should be seen as being relative, for example, to previous experience; and context bound in that it does not exist without prior knowledge and a framework within which

it is defined. Indeed, skill takes on new meanings in specific historical contexts and different worksites. For example, we may think of someone being skilled in the use of a lathe, sewing machine or computer. But empirical research indicates that each of these 'skills' is judged differently according to how the skills are acquired (training/experience), who possesses the skills (male/female, adult/youth) and in what context these skills are used (public/ private). Individuals are generally only seen to have expertise or 'skill' when such a skill is associated with paid work and when such skills have been acquired through training.

Particular types of skills such as social skills (e.g., interpersonal and emotional management) and operational skills (carrying out routine tasks), which are generally possessed by women, are less highly valued (and paid) or defined as being a lesser skill than other types of skills. Manual, strength-related skills and technical skills which have connotations of expertise, those generally possessed by men, receive higher remuneration and status. These dichotomies have developed historically, largely because it has been male workers who have had the opportunity and capacity, primarily through guild activity in the 16th century which institutionalized male-dominated craft skills through the law and then more recent union activity, to demand recognition for the types of skills they have acquired and frequently monopolized to the exclusion of women.

Indeed, male unionists have been complicit with male management in excluding women's acquisition of the more valued skills (craft, management and technological). Women's work has therefore generally been stereotyped and statistically and legally categorized as unskilled as much because they have lacked the industrial strength to define it otherwise and not due to

any real difference in actual content or technical knowledge. As Nancy Jackson comments:

The concept of skill involves a complex interplay of technical and social forces. 'Skill' is an idea that serves to differentiate between different kinds of work and workers and to organise relations among them. It has been used for many years to protect the interests of those who have power, and so has come to express the interweaving of the technical organisation of work with hierarchies of power and privilege between men and women, whites and non-whites, old and young. What historians and social constructionists have come to understand and feminists argue is that people take for granted what they are capable of doing and do not view it as a skill. Indeed, the more widely shared the skills tend to be the more they are devalued perceptually, a relevant issue for women's labour.

At the same time, it needs to be recognized that skill is not merely a social or ideological construct, but is often based on material differences in what men and women do. For example, men tend to work in more capital-intensive work whilst women work in labour-intensive work, although both work with technology. Skill, as Cynthia Cockburn has shown in the printing trade, is also bound up with 'the material of male power' in the workplace in which jobs are gendered because of the actual manifestation of the male physical presence as well as the exclusionary power of the male work culture. Hegemonic masculinity in any particular instance is therefore closely associated with technological competence or linked to images of being the male family provider.

Changes in skill definitions and boundaries, therefore, are often actively resisted by male unionists as threatening not only their material situation but also their

gendered identity. Furthermore, what is seen to be skilled is as much a factor of supply and demand, and much of the activity of professionals is to restrict supply of their expertise to a select few and by so doing exclude others, thereby maintaining their position as possessors of highly valued skills. The feminization of an occupation is often synonymous with deskilling and the displacement of women by men leads to an upgrading of skills, as men have many more horizontal and vertical escape exits. Professionalism and craft unionism have largely been built on the power of an elite group of male experts to claim unique skills. Appealing to such notions therefore has ambiguous implications for women. Finally, deskilling is not uniform for all women.

The introduction of new information technologies did not necessarily adversely affect women due to a reduction in office jobs, the deskilling of typists whilst increasing productivity, and the incorporation of the monitoring of work into the machinery itself. Empirical studies have indicated that information technology has been incorporated into existing patterns of work and did not lead to a significant deskilling. This is because any universal theory of deskilling ignores the ways in which women workers actively organize to gain greater satisfaction and control, on how they use the machine within specific contexts.

Occupational case studies and historical research have indicated the complexity of the interaction between patriarchy and capital, education and work, suggesting that the interests of one can indeed work in contradictory ways at some points and converge in other instances. Just because men, both as employers and workers, have in the past and now continue to shape work to protect their labour interests, it does not mean that the gender order is not multidimensional and internally inconsistent in ways which provide space for women workers' resistance and

gain, both individually and collectively. What can no longer be denied is that:

far from being an objective economic fact, skill is often an ideological category imposed on certain types of work by virtue of the sex and power of the workers who perform it. Skill has become saturated with sex. It is not that skill categories have been totally subjectified: in all cases some basis was found in the content of the work to justify the distinction between men's and women's work. But the equations—men/ skilled and women / unskilled—are so powerful that the identification of a particular job with women required that the skill content of the work would be downgraded.

Skill is therefore a relational concept, just as is gender. It is how one activity, attribute or form of knowledge is compared with others. What is at issue is not whether deskilling occurs, or whether reskilling is possible, but rather why the gender stereotyping of jobs, with men largely controlling the more highly skilled (and technological) jobs and women the less skilled (social) jobs, has not altered given the inconsistent findings to support more universal and totalizing theories. We need to distinguish between the ways in which skill was 'Used to establish initial occupational segregation and how it has been used to maintain gendered divisions of labour.

Likewise, education does not instrumentally serve the economy or organize itself in correspondence to production. The role education plays in either the deskilling or reskilling theses has also been oversimplified and deterministic. Whilst human capital theory emphasizes supply-side forces of the labour market (e.g., skills possessed by individual workers) with little reference to the production process, labour process theory has tended to ignore the labour market. In the former perspective, education is an individual

investment; in the latter, education systematically reproduces social inequalities based only on class. Neither has a sense of the contradictory relationships in the education work relationship, nor how work and education must be linked to the family and the gendered subject. Nor do they recognize how various discourses or policies seeking to produce equity (equality of opportunity, vocational education) are translated differentially, even subverted, at the level of practice within specific locations and contexts. This requires investigating small-scale, localized relationships within occupations, organizations and worksites and points to the need for further historical and process-type case studies. Work of this type is already under way. Studies of vocational education in 20th-century Britain; corporation schools in early 20th-century USA; unemployed youth in Victoria in the 1930s; adolescent girls' career choices in 1950s Victoria; work experience programmes in the 1970s indicate how vocational schemes intending to produce more malleable and productive workers have often meant targeted youth were less likely to be involved in the workplace in the area in which they were 'trained'.

I have emphasized the human capital model of the education-work relationship and its critics is more emphasized because it underpins the economic, award and educational restructuring in Australia in the late 1980s and early 1990s negotiated between the Federal Labor government with the complicity of the male-dominated peak union organization within the framework of the Economic Accord. Indeed, current trends appear to have assumed what Attewell has described as a positivist approach to skill.

Despite expansion of the service sector and the collapse of agriculture and mining during the 1970s, the

solution to Australia's economic crisis was seen to rest with developing a manufacturing and science infrastructure. Education was to assist by focusing on science, maths and applied technology and technical education, as previously, in the 1930s and 1900s, it was promoted as the main avenue for developing the skills base for the economic infrastructure. In 1974, the Technical and Further Education (TAFE) colleges were established to meet directly the immediate training needs of industry. But the TAFE system was saturated with masculine bias and skill training was modelled on the male craftsman. Not only did apprenticeship continue to absorb its resources but the training, rather than educational emphasis, reflected the interest, experience and energy of its predominantly male staff.

Women's access programmes intended to act as bridging courses for women between generalist education and specialist technical courses were secondary to the legal commitment to apprenticeship monopolized by males. As unemployment increased, the technical versus general education debate within the TAFE sector intensified and 'equity' (often equated with access to women) lost out to efficiency.

Vocational relevance in the context of declining resources in the TAFE sector meant providing training which had immediate economic benefit (job-specific skills) which met workplace demand rather than more general prevocational education oriented towards interpersonal and life skills (women's access programmes). And, as has been the pattern since 1900, women tended to pay for their vocational training in specialist skill areas such as hairdressing and clerical work whilst the federal government maintained high levels of funding for apprenticeships and in areas which were traditionally male fields (electronics and engineering).

Schools initially also responded to the growing youth unemployment after 1974 in traditional ways, largely because state schools and individual youth were again blamed for job shortages which were a consequence of global and structural factors. For example, there was concern to upgrade skill formation in new technology with the introduction of computers and word processing. Specific courses were developed for 'at risk' youth which were more vocationally relevant, e.g., word processing and corporate secretarial work. Sandra Taylor argues that in fact in Australia this was training girls in job-specific skills at a time when the introduction of word processing was in fact reducing the demand for female school leavers with clerical skills by over a half during the period 1971-76.

Whilst the rationale for such business courses at secondary and tertiary level was to impart job-specific vocational skills, the courses themselves, as in the past, were more concerned first, about the socialization of the female students into 'good' secretarial practice which was premised on the acquisition of social and highly gendered constructs of femininity rather than technical skills and, second, a 'life skills' emphasis due to the high possibility of unemployment. As in the past, the emphasis on social rather than cognitive or technical skills for 'at risk' students virtually guarantees their unemployability, although within this 'skilling' is couched as a means of promoting equity through improving at-risk youth's access to the market. Schools are not directly catering for labour-market demand, but as much meeting political pressure to address wider social issues of youth unemployment.

Likewise the first youth employment schemes of the Liberal Government focused on the mismatch between youth's skills and those required by the labour market resulting from the perceived failure of schools. Again,

youth policy initially relied heavily on the private business sector, voluntary organizations and community-based programmes to create solutions for this youth crisis, e.g., Community Youth Support Scheme. At the same time major policy initiatives kept the responsibility for vocational training with the public educational sector, e.g., the Transition Education Program which encouraged 'at risk' youth to stay on at school. TEAC rejected narrow vocational training in favour of a more integrated studies curriculum designed to encourage the development of a wide set of skills broadly related to work and human relations (coping and survival skills) and 'self' reliance'. Whilst this did produce many worthwhile curricular practices in schools it still individualized the youth problem by emphasizing self-help and social skilling to increase 'juvenile productivity'.

So by the 1980s two competing educational ideologies existed-the vocational manpower perspective on transitional education exemplified in such community and non-school programmes as CYSS, which focused on social and survival skills, and a 'liberal approach in which schools supplied general skills transferrable to a range of circumstances. The latter direction was extended with the Labor Party's election to Federal Government between 1983 and 1987 and the Participation and Equity Program which sought to 'mainstream' educational reform and make the curriculum more inclusive and less academic, and hopefully, therefore, more attractive to more students. Whilst TEAC had been content driven (teaching job skills to meet employer demands for 'school leaver with relevant skills'), PEP moved on to examine the concept of a common curriculum.

Whilst there is a high level of continuity in how vocational education is seen to be the panacea for youth unemployment, and how 'vocational' for working-class youth and girls implies the imparting of social and

attitudinal skills rather than technical or high-level cognitive skills, the 1980s witnessed significant changes in ways in which the discourse of vocationalism is framing educational policy. First, there has been a move away from the view that the state should fully fund education because the state benefits from the skilling of its citizens, towards a market philosophy which asserts that the individual also benefits from education and training and should contribute financially as well through a graduate tax in tertiary education and user-pay fees in TAFE. This is a good indicator of the level to which economic rationalism became orthodoxy within a federal Labor Party which abolished university fees in 1972.

Employers are also expected to fund some small part of the costs of upgrading skills with the industry training levy of 1 per cent, although Australian industry has historically invested little in research and training. The hegemony of human capital view is also clearly evident in the various national reports on education, training and technology with their 'rejection of Keynesian economics' and 'reversion to classical political economics'. Hence the emphasis on educational production functions (which presumes an input-output industrial model) and cost effectiveness as a means to measure educational output and reduce the wastage of human capital.

Recent reports invoke the capacity of 'market forces' to allocate efficiently labour power and the distribution of educational opportunities for individuals. That is, the market will apportion rewards according to merit and therefore deliver equity, a claim now challenged with high white-collar unemployment. A second difference which emerged with the *Kirby Report on the Labour Market* in 1985 is the desire to minimize labour-market segmentation, as it impeded the creation of a 'flexible and highly skilled workforce' able to adapt quickly to the

changing needs of a rapidly changing and more technologically sophisticated post Fordist workplace.

The gendered division of labour is now seen to be unprofitable and unproductive (and not just unfair). Women are now the 'wasted resource' to be encouraged to enter areas which suffer a skill shortage—science, engineering, technology and the trades. Third, past dichotomies are disappearing from the discourse of vocationalism as they lose their power when confronted with the perceived needs of the post-Fordist worker. This is most obvious in the oft-repeated statement that the 'artificial distinction between "general" and "vocational" has long outlived its usefulness The Schools Commission does not see a "necessary conflict between general educational goals and vocationally useful education" . . . nor a necessary dichotomy between the needs of the individuals and the interests of the nation as a whole'. Again, in 1991, the *Finn Review on Postcompulsory*

Education and Training stated 'both individual and industry needs are leading towards a convergence of general and vocational education. There is an increasing realism internationally that the most successful forms of work organization are those which encourage people to be multi-skilled, creative and adaptable'. Both reports presume a more instrumental view of education directing education towards national economic priorities as we move into a post-Fordist society.

The post-Fordist worker, therefore, is expected to display flexibility and adaptability. Job continuity is no longer the norm. The language of skill now focuses on 'multiskilling' and 'broadbanding': the transferability of 'generic' skills across a broad band of work situations. 'Multiskilling' is seen to be distinct from job-specific training, the latter now relegated to specialist courses in

TAFE. Skilling in this context has taken on an abstract quality. Whereas skills in the early and mid-20th century referred more narrowly to what were seen to be specific technical or manual competencies, skilling now also refers more broadly to social, affective and intellectual competencies as well, e.g., entrepreneurial and creative skills in the search for a 'clever country'. Field in Skilling Australia, for example, defines skill formation as 'a holistic concept that includes "education", "personal development", "formal training", "on the job learning" and "experimental learning" '. Likewise, education, as the means to acquiring the necessary skills, has also to become 'flexible'. For example, In the National Interest states: 'the object of education is the development of educated persons who have the breadth of knowledge, useful and readily refocused skills, a commitment to continue learning, and competencies which make them effective persons in the various facets of their social and working lives'. These sentiments are echoed in the Finn Review.

The educational response in curriculum terms, as in *Strengthening Australia's Schools: A Consideration of the Focus and Content of Schooling*, has been to emphasize critical thinking, competencies and problem solving rather than content; what could be described as learning about learning. Knowledge, skills and capacities are therefore seen to be discrete. Indeed the language of skills of the 1980s implies that skilling itself is 'content free'. Out of this, a new 'curriculum of employability' for the majority has emerged, defined by the Finn Review as a 'general vocational' education which is 'broad and balanced' with an 'appropriate mix of vocational and general education', 'theoretical and applied studies'. Learning is work, and work is learning in this new curriculum.

Literacy and numeracy are now joined by computer literacy and communication skills as the key elements of vocational literacy. Specific subject fields (language and communication, mathematics, scientific and technological understanding, cultural understanding, problem solving, personal and interpersonal) are being broken down into 'key competencies'. This is a further shift in the direction started by the Australian Education Council's Hobart Statement on National Curriculum Objectives towards finding common definitions of work-related key competencies (skills) in specific fields of knowledge or learning areas so that they too can be assessed and compared across sites, across time and across individuals.

A number of dilemmas exist for educationalists here. First, the highly generalized 'language of skills' is problematic for educators because it lacks specific criteria for translating policy into practice. Skills can mean minimal literacy and numeracy, can refer to specific skills or more generic skills of comprehension and problem solving, skills in emotional management or high-level cognitive expertise, or can imply the capacity to increase ability in an area and pin mastery or excellence.

There now appears to be a shift towards clarification of what is meant by skill. This creates new problems, given that the new competency based approach to curriculum is both controlling of students and teachers, not only because it has a particularly narrow behaviourist view of pedagogy, but also because it can be linked to standardized assessment. Second, the introduction of problem solving includes the traditions of liberal progressivist educational thought with its focus on analysis, critical thinking, decision making and creative thinking but offers a new competency: 'skill transfer to new contexts'. Third, the construction of skill is no less gendered in this new reading of the language of generic skills, despite the apparent inclusion of equity. Rather, it

has assumed different nuances and produced new ironies. For example, women's work has traditionally been associated largely with the emotional management skills (caring and sharing) and therefore not seen to 'skill'.

The notion of the multi-skilled manager in corporate management has effectively captured, without the same commitment, these emotional management, communication, interpersonal team-work skills in management and marketing. This is most evident in the way in which the Finn Review perceives interpersonal and personal key competencies which include personal management and planning, negotiation and team skills, initiative and leadership, adaptability to change, self-esteem and ethics, all expectations of what may be required of the post-Fordist worker (or androgynous manager?) in the corporate state. And, as with previous appeals to vocational education, the Finn Review links the skilling of Australia to disadvantage (rather than equity or discrimination).

In seeking to promote 'mass secondary education until the age of 19, and in so doing raise the status of technical education, the Finn Review glibly slips across the essentially male-based power structure of TAFE, and the possibility of making it (and the trainee-ships) more accessible to women. Furthermore, the Mayer Committee, which is expected to operationalize the specific meaning of 'work-related key competencies' has been belatedly asked to consider 'competencies relating to family and household management as a way of ensuring gender equity in employment opportunities'. Thus shifts in the meaning of 'skill' signify changing social relationships within the labour process and between the public and private in ways which do not necessarily alter power relationships.

Indeed, despite the theoretical shift from the notion of 'situation specific' towards 'generic' skills, the current national agenda for skill formation and all its educational implications has not significantly altered the underlying positivist and common-sense view embedded in human capital theory that skill is a fixed and measurable attribute defined by the technical needs of the workplace. And this is clear in the way in which the social constructivist position assumed by feminists has been marginalized. Increasingly, skilled work has been more closely associated with mental and esoteric rather than the physical and everyday activities. The social constructionist position, one largely assumed by feminists working in this field, is that skill is a relational phenomenon which depends not only on the relation of one kind of task to another (e.g., mental/manual work) but the supply and demand for people to do these tasks (e.g., local labour market) and the capacity of the incumbents to exclude others (e.g., male jobs/female jobs) as well as the material and technical aspects of work. Feminist theories of skill perhaps point to the need to consider different ways of judging skill ones which value different types of skills, which are less individualized and more experientially based (Wacjman 1991).

So why has the skilling thesis of human capital theory become part of Labor orthodoxy? My argument suggests that it can be attributed partly to the poor database on skill classifications and how skills are linked to education, as well as to the lack of comprehensive research on the labour market in Australia. But there are other factors which must be considered. First, the focus on skills has much to do with the maintenance of particular gendered power relations in the workplace. Whilst there has been some sensitivity to the notion of skill as a social construct, it has been marginalized as a

women's issue, because to view skill as other than an objective criterion for job evaluation is to undermine the position, historically developed, of male unionists in the skilled trades. In current award restructuring there is only token acknowledgement of the social constructionist approach to skill which tries to understand the conditions under which some occupations are marked as more skilled than others when trying to comprehend the anomaly of women. Because the male craft worker is still the benchmark for skill definition in award restructuring, it is in the interests of negotiators not to do otherwise: the trade unions who cannot negate past notions of skill which have been historically constructed to favour male skilled trades; the business groups who seek to reduce costs through redefinitions of skill and have always benefited from women's lower pay rate; and the male managers who seek to maintain the status of mental over manual skill and be sure that skill is measured by how many you have authority over and how much money you manage rather than degree of autonomy or actual cognitive activity. No wonder women's interests in this process have largely been perceived as particularistic and marginal.

Second, there is relative empirical ignorance of the complexity of factors which influence the individual's educational and occupational decisions and how these are impacted by gender, race and class. Third, the lack of criticism indicates the power of the hegemonic discourse of vocationalism in a period of economic uncertainty, about how schools should better serve the economy, and how this ideology has assumed a commonsense view of the school-work nexus which is ahistorical, inaccurate and deterministic.

What are the educational consequences of the uncritical acceptance of the language of skills in

education? First, the language of skills conflates the acquisition of menial, trivial and routinized tasks by subdividing and labelling, thereby converting 'tasks' into 'skills'. In so doing, such tasks become 'meaningful and productive work'.

In Australia, the conflation of skill in the educational discourse is evident with the introduction of work education as a cross-curriculum activity in many states. Now mental, manual and social skills acquired in classrooms can be related in all courses to future work. Study skills are now defined as productive work, such valuable intellectual skills being construed to lead to more creative and flexible workers. Second, by using the 'language of skills' as a justification for education, training and skilling, it 'rationalizes' the connection of welfare payments to what appears to be the acquisition of skills which are supposedly beneficial to both the individual and the community. In this way, it is generally the working-class Student who is forced to undergo 'upskilling' in menial work or acquisition of life' or social skills rather than technical or cognitive skills in order to receive welfare benefits through such programmes, which means the recipients of such 'skilling' will remain 'outsiders' in terms of the mainstream skill formation.

Third, there is increasingly a skills-based approach to curriculum formation away from a curriculum based on teacher-pupil interaction according to needs towards a mechanistic, standardizing approach. The new Victorian Certificate of Education finalized in 1992 emphasizes a broad range of problem-solving skills or learning about learning. The generalist liberal curriculum (as opposed to the classical liberal curriculum) has been 'vocalized' in that it is seen to provide each individual with a set of skills which will supposedly broaden their post-school options in an idealized conception of the nature of skills of work and the operation of the labour market, that is,

the multi-skilled student. The competency-based approach to learning being taken up by the Finn Review, a report written by non-educationalists, despite its claim to produce the post-Fordist worker, assumes essentially a behaviourist (if not Taylorist) approach to pedagogy, in which curriculum is treated as a technology, the teacher as a facilitator in transmitting an agreed package of competencies; in which competencies are concrete and measurable products of a linear learning process transferable to the workplace. In so doing, it still adheres to the craft-based view of skill of the late 19th century. Unfortunately, in the search for key competencies within a national curriculum and assessment framework, competencies which are testable and comparable, whichever view of skill dominates has critical implications for curriculum and assessment, and therefore for pedagogy. Fourth, it is the state system of education which has been blamed for education's failure to prepare youth with the necessary vocational skills given that the public education system has historically been expected to 'warehouse' potentially disruptive youth, thus allowing the private system its uninterrupted monopoly of the liberal-academic curriculum. Thus the 'language of skills' is ideologically powerful to conservative governments seeking to further privatize education at the cost of residualizing state education.

Finally, new dilemmas arise out of the discourse of vocationalism and the skilling debate for women and girls in the current educational context. The skilling thesis has been closely linked to arguments for greater equality of opportunity. Historically, girls and women have benefited from state interventionism, e.g., Equal Opportunity Policy and the funding of vocational initiatives.

Working-class girls, for example, have been funded by the state whilst acquiring job-specific training in

stenography and typing in the period after 1945 until the 1970s when such skills became redundant. This has promoted the social mobility of many working-class girls into white-collar jobs, in relatively more pleasant work environments than factories. At the same time, these gender-specific vocational skills, slotted them effectively into female-type jobs (e.g., secretarial). In this way, the vocationalization of schooling reinforced rather than challenged the gender relations of the workplace, whilst allowing limited social mobility for a few. Likewise, youth traineeships in the 1980s (a watered-down version of apprenticeship), which specifically targeted girls to broaden their skill base, succeeded primarily only in the public sector whereas the private sector failed to respond. So, in one sense, women continue to benefit from state intervention. But the state is also determining the direction and therefore redefinition of equity'. Current national policy initiatives (*Higher Education.- A Policy Statement* and the *National Policy on the Education of Girls*) also favour an unsegmented and free labour market, undifferentiated by sex in which the multiskilled individual can move within broad bands of related occupations acquiring new skills and updating old, with a particular focus on non-traditional fields (science, maths and technology). These vocational arguments are fired by a particularly narrow view of equality and an ill-informed notion of how the labour market works and so may be a disservice in the long run to most women's and girls' interests.

Such policies continue to ignore the relationship between the public domain of paid work and the 'private' aspect of individual lives. Instead, women are being 'repackaged' for the service of the market. It is incorrectly assumed, for example, that the skills held by women -will receive the same economic and social rewards in the labour market. The notion of equity is

also redefined, linking it to individual choice in a free market rather than to the group disadvantage constructed through a gendering process embedded in the interactions between the labour market, the labour process, education and the family. The needs of the individual are also redefined narrowly in terms of skill and not more broad human attributes. Furthermore, the emphasis on women gaining access to the science and technology labour market privileges, even if by default, cognitive and technical skills over social and affective skills, which are the 'traditional' skills associated with women's work. And where social skills are valued, as with the 'multiskilled manager', they are encouraged merely for their instrumental value in increasing productivity and not for their intrinsic human value. Whilst women may no longer be destined only for motherhood and family, their 'feminine qualities' (caring, interpersonal relations, communication) have now been 'co-opted' for managerialist ends. Because of other complexities, it has, therefore, become increasingly difficult at a practical level to distinguish between 'liberal /progressive ideas concerning the freedom for girls and women to move upwards in educational and occupational hierarchies and "liberal" /laissez-faire ideas about labour market freedom "the myth perpetrated by the New Right"'.

In conclusion, at a macro level, other contradictions follow if the technological progressivist 'skilling thesis' is taken to its logical conclusion in an uncritical manner. The introduction of technology as a social good leads, to temporary employment dislocation which demands constant reskilling and there is a continual 'drain' on public expenditure acquired by the state through taxes on capital accumulation, which in turn reduces profitability and restricts capital accumulation. This puts pressure on Labor governments to privatize and individualize skill

acquisition. Furthermore, if education systems were more effective in producing the well-educated students as the upskilling thesis implies and in reducing the sexual inequalities of the labour market, the result would be socially critical employees (half of them women) who would be more disruptive and demanding in terms of conditions of employment, a trend which would be detrimental to capital's and/or male control over the workplace.

Developing in adults a sense of their personal power and self-worth is seen as a fundamental purpose of all education and training efforts. Only if such a sense of individual empowerment is realized will adults possess the emotional strength to challenge behaviours, values, and beliefs accepted uncritically by a majority. Both causally antecedent to, and concurrent with, this developing sense of self-worth in the individual comes an awareness of the contextuality of knowledge and beliefs. The task of the educator, then, becomes that of encouraging adults to perceive the relative, contextual nature of previously unquestioned givens.

The educator should assist the adult to reflect on the manner in which values, beliefs, and behaviours previously deemed unchallengeable can be critically analyzed. Through presenting alternative ways of interpreting and creating the world to adults, the educator fosters a willingness to consider alternative ways of living. These criteria are offered for consideration by educators as fundamental indicators by which they may judge the worth of a formal or informal effort to facilitate learning.

In real life, of course, all adult will not develop a sense of self-worth, an awareness of the contextuality of knowledge, a willingness to speculate on alternatives, and a capacity to re-create their personal and social

worlds, according to the neatly sequenced stages described in the previous paragraph. Some adults will come to appreciate the contextuality of knowledge or learn to speculate on alternatives, without having the sense of self-worth and personal power needed to realize those alternatives.

Others will have the internal strength to alter certain peripheral features of their lives but will be unable to change the patterns that govern their significant personal relationships. Still others may consider social alternatives and even imagine new political forms, but lack the techniques, skills, or collective support needed to effect change. This does not mean, however, that we should abandon attempts to specify as clearly as possible the criteria we are adopting to determine the success of our efforts. Such criteria will inevitably, take the form of abstractions. They will be oversimplifications of reality. The real world of social encounters is sufficiently chaotic to make the detection of whether or not these criteria have been satisfied a correspondingly haphazard and often messy enterprise.

Nevertheless if we make no attempt to specify criteria, we will be unable to assign value and worthwhileness to different activities. All educational encounters will then exist in some kind of moral vacuum, and we will be unable to judge whether a lecture in which a religious or political dogma is fervently and uncritically expounded is more or less educational than a discussion of the ethical assumptions underlying communism and capitalism. If we are to wear the mantle of "educator," we must, at some minimum level, make explicit the criteria by which we determine the educational worth of our efforts. Not to do so is unthinking or dishonest, and it is to consign ourselves to being adaptive and reactive satisfiers of whatever consumer learning needs happen to capture our

attention. But it is to the means for determining whether or not these criteria are actually being met in an educational activity that we must now turn our attention.

The preceding chapters have been concerned chiefly with matters of practice-facilitating adult learning through self directed modes, using and ragological methods, teaching adults through discussion groups, developing programs for adult learners, and evaluating effective practice. Implicit in these discussion of practice, however, has been a concept of facilitation somewhat different from that held by many practitioners.

The philosophical assumptions on which this concept is based be stated clearly. As has been repeatedly argued, practical expertise that exist in a moral vacuum can be a dangerous thing. Practitioners can become technically proficient but find that without a firm philosophical rationale to guide the application of their skills, they are devoting their efforts to programs and purpose that are morally dubious. Contained in these characteristics are features that will be familiar to those who know the literature of humanistic psychology and psychotherapy- a respect for participants in the teaching-learning transaction, a commitment to collaborative modes of program development, and an acknowledgment of the educational value of life experiences.

Hence, effective facilitation means that learners will be challenged to examine their previously held values, beliefs, and behaviors and will be confronted with ones that they may not want to consider. Such challenges and confrontations need not be done in an adversarial, combative, or threatening manner; indeed, the most effective facilitator is one who can encourage adults to consider rationally and carefully perspectives and interpretations of the world that diverge from those they already hold, without making these adults feel they are

being cajoled or threatened. This experience may produce anxiety, but such anxiety should be accepted as a normal component of learning and not as something to be avoided at all costs for fear that learners will leave the group.

There are forms of fulfillment that are quite unlike those produced by a wholly joyful encounter with a new form of knowledge of a new skill area. It is this dimension of increased insight through critical reflection on current assumptions and past beliefs and behaviors that is sometimes ignored in treatments of adult learning. One purpose of this book is to place the prompting of this form of learning at the heart of what it means to be a good facilitator. It is important to state, however, that because teaching learning transactions are collaborative, the prompting of critical reflection may not always be done by the participant designated as the facilitator. In the most effective learning groups, facilitating behaviors are assumed by various members of these groups at different times.

One features the leaderless groups discussed in Chapter Six—women's consciousness-raising groups, quality circles, political advocacy groups, and so on—is that the member who is responsible for the initial formation of these groups does not have to assume full responsibility for facilitating learning. As a group culture develops, various members will challenge others to examine their current ways of thinking and living, and this activity will be seen as wholly appropriate. As a recent study of self-concept change among black women students at college points out, one of the valued characteristics of good facilitators as identified by these women is a readiness to challenge learners.

The public articulation of a philosophy of effective practice is an activity viewed with apparent indifference

or distaste by many educators and trainers of adults. Such educators might appear to an outsider to be bereft of any rationale for their practice. This is rarely the case. In reality, most practitioners accept employing agency mission statements as general definitions of purpose or declare good practice to be the satisfaction of felt and expressed needs. These positions in themselves exemplify a philosophical rationale-that of pragmatism.

Acceptance of this pragmatic rationale is perhaps most evident in the tendency to equate the design of effective program-planning models with the sum total of effective practice. According to this argument, the education of adults is a matter of designing, conducting, and evaluating educational experiences so as to meet the felt needs of adults. Hence, practitioner effectiveness becomes defined in terms of processes and activities-the ability to design, conduct, and evaluate programs for learners-rather than in terms of fundamental purposes or curriculum. But if we view effective practice solely as the improvement of ever more refined practice skills and regard facilitator roles and responsibilities as being primarily those of technicians of design, we denude practice of any philosophical rationale, future orientation, or purposeful mission.

There exists no philosophical yardstick in terms of criteria of success, notions of purpose, or appropriate curricula against which the effectiveness of such facilitation can be judged. Furthermore, if we accept the view that we should serve only felt needs, then our priorities, purposes, and primary functions will be wholly determined by others. Our curriculum will be devised in response to demands made by those who can best attract our attention and are most articulate in presenting their case. To counter this danger that facilitation will become solely a responsive, reactive activity, it is important that practitioners develop a philosophical rationale, or what

Apps calls a belief system, to grant their practice order and purpose. They need to identify those characteristics by which the fundamental worth of any attempt to facilitate adult learning can be judged.

This does not mean that such a philosophy must be exemplified to its fullest degree in every educational encounter with adults. Such an insistence would be so intimidating to practitioners as to prevent any attempt to implement a philosophy. We should regard this rationale rather as a variable that can be realized to a greater or lesser extent at different times, in different settings, with different groups. Even within one class session the extent to which this philosophy is realized will vary with the nature of the individuals concerned, the exercises pursued, and the educator's conduct. Nonetheless, it is vital that a clear rationale be articulated so that practitioners may have a benchmark for judging the extent to which their activities exemplify fundamental purposes, principles, and practice.

Without a coherent rationale, practice will be condemned to an adaptive, reactive mode. Practitioner activities will be determined by current curricular trends or by the ability of certain individuals and groups to make themselves heard and their demands felt. Several writers have indeed warned of the dangers of succumbing to a reactive and pragmatic rationale. Lawson and Monette have both condemned the insidious influence of the service rationale on programs for adult learners.

According to this rationale, practitioners are technicians whose function is to cater to the expressed needs of their clients in as effective a manner as possible. These writers point out that by responding to felt needs, the educator does not have to make value judgments concerning the relative merits of different curricular

offerings. Only rarely is there any acknowledgment in the literature of the moral and professional requirement that the educator act in accordance with value choices. Crabtree has also condemned the manner in which the idea of "customer service" comes to determine the form of the curriculum for adult learners. Similarly, Powell warned against the importing of a business rationale into adult education and expressed his concern at the growing tendency to let a preoccupation with needs assessments and marketing procedures replace the setting of fundamental goals for a program.

Seduction of the programmer by evidence of a strong and immediate demand for a certain course offering was also recognized by Herring, who blamed the galloping mediocrity he saw in many programs for adult learners on the institutionally prescribed need to increase enrollments. Herring lamented the tendency of program planners to avoid social and political issues that they thought were too serious or too contentious to draw large numbers of participants. In adult education, however, we seem currently to be in danger of becoming preoccupied with refining techniques to the exclusion of any consideration of the rationale underlying those techniques.

We are philosophically numb, concerned with the design of ever more sophisticated needs assessment techniques, program planning models, and evaluative procedures. It seems not to have occurred to us that the perfection of technique can only be meaningful when placed within a context of some fundamental human or social purpose. Technique is, after all, only a means to broader ends. When technique is worshipped to the exclusion of the human or social purposes it is meant to serve, then it is easy for us to become dazzled by the convolutions of the latest shaman of procedure and by the pronouncements of those who flaunt commonsense

ideas regarding teaching and learning under the guise of presenting a revolutionary paradigm of practice. In contrast, this chapter attempts to comment on the fundamental nature and proper purpose of facilitating learning by outlining a philosophy of practice that comprises three fundamental elements. Finally, on the basis of this definition and its general statement of purpose there should be formulated a set of criteria by which the success of various practitioner efforts can be judged. Such criteria would allow us to reflect on our own practice and to examine the activities of others in terms of their effectiveness. This definition, statement of purposes, and explication of criteria should be firmly and avowedly prescriptive.

A philosophy of practice should, at the most fundamental level, be concerned with the resolution of second-order questions, that is questions that cannot be answered by recourse to the empirical world. In other words, we cannot conduct a survey to determine in some objectively empirical sense what should be the purpose of our efforts. We can conduct assessments of present levels of competence and declare certain populations to be in states of educational need with regard to some previously defined standard.

Such assessments are only objective, however, to the extent that they are based on a normatively defined standard of competence. Similarly, by conducting a Delphi survey of adult education professors, we can determine their views on the proper purposes of facilitation. This survey will not answer for us, however, the fundamental question concerning what should be the purpose of educating adults, for this is a question that is explored in a quite separate area of intellectual discourse. The domain of discourse surrounding such a question is one of prescriptive preferences, moral commitments, and categorical imperatives. We will come to construct our

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philosophy of practice on the basis of the personal and social imperatives we feel to be most potent. In the course of this construction we will admittedly be cognizant of the opinions of those intellectual leaders we respect. Such opinions cannot grant to our philosophy its internal power and commitment, however, since this will be derived from our experience of the world and from our personal belief system concerning the most desirable and meaningful aspects of this experience.

A philosophy of practice should allow considerable scope for operationalization. In an activity such as facilitating learning, statements of fundamental purpose are of limited value if they cannot be realized in terms of practice. Concomitant with this outline of a philosophical rationale, therefore, should be some guidance in regard to teaching method, curriculum development, program planning, and evaluation. But such techniques will not exist in their own right; they will be grounded in, and derived from, a carefully explicated rationale. This rationale from which are derived various practical injunctions in terms of planning, teaching, curriculum development, and evaluation will serve as a yardstick against which the effectiveness and worth of a particular effort can be judged. This philosophy and its concomitant operationalizations should serve as a benchmark and as a guide by which practice can be mapped.

The philosophy of practice proposed within this last chapter centers on the notion of the adult's developing sense of control and autonomy. Such autonomy is not to be equated with atomistic isolation; rather, it is realized in personal relationships, in sociopolitical behavior, and in intellectual judgment. The purpose of facilitation is to assist individuals to begin to exercise control over their own lives, their interpersonal relationships, and the social forms and structures within which they live. This is not

to say that facilitation will enable adults to exert complete control over all aspects of their worlds.

However, it is possible to envisage existences that are more or less meaningful and authentic to the individuals involved, according to the degree to which they feel they have some proactive role in creating their worlds. It is proposed that all involved in teaching-learning transactions assist each other to identify the external sources and internalized assumptions framing their conduct and to be ready to assess these critically. Such critical awareness will involve an appreciation of the contextual, provisional, and relative nature of truth, public knowledge, and personal beliefs.

When a disjunction becomes evident between adults' individual aspirations and the socially received codes, value frameworks, and belief systems informing their behavior, then autonomy is reflected in a jettisoning of received assumptions. Occurring along with this abandonment of assumptions perceived as irrelevant and inauthentic will be the transformation of individual and collective circumstances.

Teaching-learning transactions are no exceptions to this rule; indeed they possess an unusual degree of potency in that the facilitator's statements and comments are typically granted a high degree of credibility and significance by learners. Learners grant authority to interpretations, generalizations, and statements of preference made by the facilitator, even though he or she may avow this equality of status with learners and emphasize that they are partners in a collaborative endeavour. Facilitators may profoundly dislike this role, particularly those of a democratic, egalitarian temper. To be the beneficiary of imputations of moral as well as intellectual superiority by learners is confining and often even embarrassing. However, inasmuch as most adults

received an initial education that encouraged them to see teachers as authority figures, it is hardly surprising if they prove incapable, at least at first, of viewing the facilitator as partner and intellectual collaborator. This ascribed authority places facilitators in an uncomfortable position, particularly if they subscribe to andragogical principles. It also makes the adoption of an ethical code of practice—a requirement of first importance in any profession doubly necessary.

Any position of authority, whether ascribed or prescribed, carries within it the possibility of abuse. This potential will be reduced if facilitators seek, as rigorously as possible, to submit all assertions to critical scrutiny. Facilitators will cite appropriate evidence for any generalizations they make and will treat all theories, explanatory systems, standards of esthetic discriminations, conceptual constructs, and criteria of excellence as provisional and relative. Aside from viewing theoretical systems or explanations as provisional, the facilitator should also present alternative interpretations and possibilities to students. Such alternatives may be esthetic, cognitive, or sociopolitical. Hence, a course on craft skills should encourage inquiries into the origins of standards of excellence and not concentrate only on the development of psychomotor skills exemplifying those standards.

A similar requirement also holds for courses dealing with bodies of cognitive knowledge. These should submit central concepts and theoretical frameworks to critical review. Criteria of intellectual excellence should be viewed as humanly contrived, not divinely ordained, and all statements and assertions should be regarded as provisional. With regard to those courses dealing with behavioral phenomena—for example, role training, interpersonal skill development, or counselling techniques—the twin canons of relativity and provisionality also per-

tain. In fields such as health education, administrative studies, or personnel management, training courses can only qualify as examples of effective facilitation if the behavioral paradigms presented in them are subjected to critical scrutiny. Moreover, if such courses are to be seen as involving education and not simply training, they must incorporate a willingness to consider alternatives to the popularly prevailing norms governing correct professional behaviors. Participants in such courses would learn to be skeptical of definitive sets of principles of practice and to view conventionally accepted wisdom or apparently exemplary behaviors as relative and provisional.

The chief argument proposed here is that effective facilitation is present when adults come to appreciate the relative, provisional, and contextual nature of public and private knowledge and when they come to understand that the belief systems, value frameworks, and moral codes informing their conduct are culturally constructed. It is also evident when adults are enabled to create meaning to their personal worlds through a continual redefinition of their relationships with others.

Following on from this exhibition of personal autonomy and the realization that individual circumstances can be consciously altered comes the insight that it is possible, in concert with others, to change cultural forms, including attitudinal sets, role expectations, conventions, and folkways, as well as social structures. This concept of facilitation is obviously prescriptive; that is to say, the outcomes identified in the preceding paragraph are given in the form of stipulative preference statements. This is not to imply that adults can become adept at critical reflectivity in some final, static manner. Rather, it is to say that adults should be encouraged to engage in the continuous critical analysis of received assumptions, commonsense knowledge, and conventional behaviors. The state of adulthood can never

be fully realized, and it is not a question of an adult's acquiring a set of fixed competencies.

Adult education as a transactional encounter is essentially a process. Central to this process is a continual scrutiny by all involved of the conditions that have shaped their private and public worlds, combined with a continuing attempt to reconstruct those worlds. This praxis of continual reflection and action might be accurately viewed as a process of lifelong learning. It is important to realize that philosophical prescriptions painstakingly derived from impeccably developed rationales are going to be contradicted daily in the real world of practice.

Teaching-learning transactions are, after all, dynamic interactions—psychosocial dramas in which unforeseen eventualities, serendipitous circumstances, and individual idiosyncrasies constantly distort our neatly planned visions of how our learning groups should function. Educators employed within formal educational institutions daily contradict their own prescriptions concerning how best to foster learners' freedom and individuality. Although all members of the group pay frequent testimony to the need to draw on individual participants' own experiences, to ground curricula in their concerns, and to evolve a collaborative format.

Educators of adults, as much as learners, uncritically assimilate various assumptions, norms, beliefs, and values, and it is a genuinely humbling experience to ask participants in a learning group to point out the disguised authoritarianism in one's own practice. What must never be lost sight of, however, is the need to develop a clear rationale for practice, even though that rationale may be contradicted or only partially realized in the day-to-day practitioner reality of facilitating learning. Without such a rationale we are little more than reactive

automatons-ciphers through whom are channeled the latest curricular or methodological fads, irrespective of any consideration of their innate validity. While a healthy skepticism regarding the possibility of continually exemplifying such a philosophy of practice is essential to the sanity of facilitators, the necessity to develop such a philosophy should be regarded as fundamental to good practice.

Educators of adults have grown accustomed to living with organizational and professional contradictions. They probably became facilitators because they saw that as a way of increasing individuals' fulfillment, happiness, and sense of control, yet organizational criteria for their success are frequently antithetical to these motivations. In colleges and universities, for example, educators are encouraged to develop curricula and to arrange classrooms so as to attract the largest possible number of learners.

The reason for this is not only to add to the sum total of human happiness and enlightenment, but also to make money. Educational institutions, particularly in an era dominated by supply side economics, are viewed by politicians, trustees, administrators, and sometimes even faculty partly as educational enterprises partly as business operations. Hence, the greater the numbers of students that can be attracted, the greater the revenues for the educational institution. In business and industrial settings, these economic criteria are applied quite openly to determining the success of training initiatives. While trainers may hope that workshops and seminars will enable adults to make sense of themselves and their worlds, their success as trainers will be judged by whether or not productivity rises as a consequence of attendance at the training sessions.

Furthermore, most educators and trainers of adults

subscribe to a professional code that acknowledges the value of democratic collaboration and the inequity of forcing students to learn. Yet in their daily practice they repeatedly encounter a set of contextual constraints that force them into precisely the behaviors that they criticize in philosophical terms. Institutional timetables, economic necessities, standardized curricula, and unofficial norms of "what works in the real world" all conspire to nudge the educator into more didactic, authoritarian attitudes and behaviors than he or she might wish.

The conspiracy of contextual constraints becomes all the more compelling when learners repeatedly declare that they wish for more direction from facilitators or that they want facilitators to "put more of themselves" into the learning encounter. Learners, as much as facilitators, have been socialized into a view of education as an authoritarian-based transmission of information, skills, and attitudinal sets from teacher to taught. Under these circumstances, it will often be hard for educators to stand firm against the temptation to take more control over the learning encounter. Yet to give in to this temptation is to reaffirm precisely those patterns of dependency that prevent adults from becoming empowered, self-directed learners.

Given the force of these organizational constraints and professional expectations, it is not surprising that facilitators revert, with only an occasional twinge of conscience, to patterns of behavior they observed in their own teachers. How, then, can they break these patterns and begin to assume the kinds of facilitation roles outlined in this book? Only by developing a thoughtful rationale to guide their practice. Possessed of such a rationale, facilitators are more likely to stand firm against organizational and professional imperatives that exert pressure on them to dominate learners under the guise of "providing structure" or "clarifying ambiguities." Without

such a rationale it is likely that most facilitators will sooner or later fall unthinkingly into patterns of facilitation that support structures of organizational convenience and confirm learners' patterns of dependency learned in the school classroom but have little to do with assisting adults to create, and re-create, their personal, occupational, and political worlds.

Central to the nation of discussion are two features that may be either complementary or contradictory. Discussion sessions can be judged successful to the extent to which they pursue certain cognitive ends or to the extent to which all members offer verbal contributions of approximately equal length. In a critique of discussion behaviors, I have examined the way in which discussion groups can become arenas of psychodynamic struggle and fields of emotional battle.

Many adults were schooled in competitive settings in which the pursuit of knowledge was obscured by the quest for grades and examination success. It is hard for such individuals to accept openness of discourse and to tolerate diverse opinions. Since discussion sessions are invested with emotional significance, any disagreement may well be interpreted as a personal assault. Additionally, groups tend to place high value on cohesiveness and to exclude deviant opinions. But as Fawcett-Hill maintains, it is important that groups tolerate deviant opinions. Such divergence guards against intellectual stasis. Bridges has specified certain epistemological underpinnings of discussion. All members should have respect for each other, and all should be sceptical of their own, as well as of others', authority. Bridge also prescribes a moral culture for group discussion; it includes six ethical principles that participants should accept as the tacit assumptions underlying their discourse: reasonableness, peaceable

orderliness, truth-fulness, freedom, equality, and respect for persons.

Discussion conforming to the epistemological principles and moral culture outlined by Bridges would be characterized by openness of content, membership, and learning outcomes. Participants would set aside their own prejudices to entertain imaginative speculation. Paterson proposes discussion as the educational activity par excellence. It is an educational end in itself, requiring no extrinsic justification. To Paterson, adults commit and discover their whole beings in the process of presenting for group consideration their interpretations of their experience. He writes that "to address others in discussion...is to bear witness to one's attempt to reconstruct oneself, experience meaningfully, and it is at the same time to invite others to share this reconstructed experience". In this way participation in open discussion becomes a characteristically human activity of the most intimate and fundamental kind.

Since openness is an essential characteristic for discussion, the concept of guided discussion must be discarded. In Paterson's words, "True discussion cannot be directed, or even guided, for to attempt to do so is in effect to opt out of the discussion, to close one's consciousness to alternative interpretations of the phenomenon under discussion before these alternatives have ever been stated" To participate in this authentic form of mutual address, in this collaborative search for meaning, requires personal courage and analytic ability of a high order. It requires adults to be willing to examine the cultural origins of many of their beliefs, to be aware of how many of the assumptions that inform their conduct have been acquired from external sources and authorities such as parents, schoolteachers, and peers, and hence to view their dearly held meaning systems as

provisional and relative. In this sense to participate in discussion in the collaborative externalization, exploration, and critical analysis of personally significant meaning systems is to realize one's adulthood to its fullest extent. Four conditions can be identified that, if they are met, are likely to increase the chance that productive discussion will occur.

The first of these is for group members to devise an appropriate moral culture for group discussions. This requires the group to arrive at a set of procedural rules for achieving equity of participation. Second, discussion leaders can give some thought to the materials that are to form the substantive focus of group discussions. The questions to be discussed should not be too factual or too uncontroversial, and they should not be answerable in the course of preparatory reading by the group. Third, the leader should be well versed both in the subject matter to be covered during the discussion and in the principles of group dynamics.

Only someone skilled at dealing with the problems caused by apparent isolates, pressures to silence deviants, and those adults who attempt to use the group as a means of bolstering their self-esteem can be said to be an effective discussion leader. Fourth, discussion participants should be prepared for discussion not only through the generation of a moral culture for discussion session but also through the development of reasoning skills and the improvement of communication abilities. In providing a forum for the pursuit and realization of these reflective analytical skills, as well as in requiring participants to evolve a democratic, moral culture governing group discourse, the discussion method is uniquely suited to facilitating critical adult learning. Although collaborative discussion is now seen as an effective mode of facilitating learning, the literature that deals with instructional methods is still based mainly on

the work of Tyler, and the task of teaching adults is frequently seen as a subcategory of the general task of program development.

Teaching is relegated to step three or four in different models of program development, including those of Houle, Knowles, Verner, Lauffer, and Boyle. In fact, teaching is generally not referred to as "teaching" at all, but rather as management of learning experiences, instructional management, or implementation of the instructional plan. As will be argued further in Chapter Ten, however, this view is only one of a number of approaches to teaching adults. The Tylerian model of objectives-oriented program development in which learners acquire skills and knowledge specified in advance by the teacher and in which success is measured by learners performance of predetermined behaviors is often constraining and overly restrictive. The model does have some utility, but chiefly in the area of psychomotor skill acquisition.

Tyler developed his work to assist schoolchildren acquire specific, predetermined skills and knowledge of an unambiguous, technical kind. In some training contexts where it is a question of acquiring technical skills, the sequenced, objectives-oriented nature of the model is highly satisfactory. The problem is that some facilitators of learning have taken this model as the paradigm suitable for encouraging all kinds of adults learning. Much of the most significant adult learning, however, is of a nontechnical kind. It is concerned with the resolution of moral difficulties, with the development of self-insight, with acquiring the capacity to explore the world views of others, with reflection on experience, and with the evolution of personal ethical codes. One mode of teaching and learning highly suitable for these forms of learning is the discussion method. It is striking just

how frequently the educational activities organized by adult learners themselves take this form.

For example, collaborative discussion is typically found in groups organized by single parents, the recently bereaved, divorcees, homosexuals, newly arrived immigrants, drug abusers, and feminists. These groups are composed of individuals who are seeking a reinforcement of their sense of self-worth. Their members are engaged in a redefinition of self and in a reinterpretation of their past actions and relationships from a newly realized psychological vantage point. They are also all seeking to set forth their experiences, to understand and explore others' experiences, and to heighten their self-awareness through this process of collaborative interpretation.

The leadership of such groups is typically rotational. At different times, various individuals within these groups will take the responsibility for encouraging others to contribute to the discussion and will attempt some kind of analysis or interpretation of the experiences that have been voiced. The adults in these groups are attempting to create new meaning systems. They are reinforcing each others' dormant, half-preceived feeling that there is some massive disjunction between their present ways of living and thinking, on the one hand, and the kind of existence they ideally envisage for themselves, on the other. At times these support and experience exchange groups transform themselves into activist groups that work to change oppressive external conditions. For some groups a common pattern will be a form of praxis in which analysis of common experiences alternates with public advocacy and demonstrations.

The very act of participating in a public demonstration in support of gay rights or to demand changes in housing and welfare policies to benefit single

parents will serve to strengthen and reinforce these adults' newly adopted and newly created identities. For groups of drug abusers, divorcees, newly arrived immigrants, or the recently bereaved, however, it will often be enough for members to meet regularly for support, for the presentation and analysis of typical problems, and for the gaining of practical assistance in negotiating the changed circumstances of their lives.

We have emphasized that the concept of facilitation should be broadened to include activities in which adults are encouraged to consider alternative ways of thinking and living and in which they are prompted to scrutinize critically the extent to which supposedly universal beliefs, values, and behaviours are in fact culturally constructed. But if we prompt adults to consider these questions, are we not really engaging in a form of amateur psychotherapy? Asking people to reflect on their experience, to consider the motivations underlying their actions, and to try to appreciate the way in which their behaviors are perceived by others sound dangerously close to playing at therapist. This argument deserves to be taken seriously.

There are many adults who suffer from clinically diagnosed conditions that range from schizophrenia to severe depression. For an educator to presume to treat them effectively is folly indeed. There are, however, many adults who are troubled, frustrated with circumstances in their personal or occupational lives, insecure concerning their abilities, and seeking ways to develop more productive relationship with others. Such adults may be disturbed at certain aspects of their personal lives, but they are in no sense clinically "disturbed." There are very few readers of these words, I would venture, who are not disturbed at some aspect of their personal worlds or occupational lives, and it is

precisely these adults who frequently form the clientele of adult classes.

One of the great tragedies of contemporary life is the overprofessionalization of all aspects of human interaction. We are getting dangerously close to believing that we can engage in thoughtful self-reflection only if we are sanctioned by some professional to whom we pay a fee for the supervision of our self-reflection. Those who accept the argument that adults can undertake reflection on their past actions and current relationship only under the guidance of a skilled psychotherapist are doing nothing more than supporting the professional power and prestige of therapists.

One of the most valuable inquiries into methods of helping adults become critically reflective was initiated by Perry and pursued by Weathersby, Weathersby and Tarule, Boud, and Cameron. Instead of talking in a general way about the development in learners of critical awareness and the realization of the contextual, subjective aspects of the world, Perry sets forth nine intellectual stages, which he terms positions. These positions are not meant to be rigidly sequential nor to be mutually contradictory.

Additionally, they do not include all the intellectual orientations possible in adulthood since they are derived from a series of intensive interviews with undergraduate students at Harvard. They do provide a useful analytical structure, however, that can be applied to understanding the development of critical reflectivity in adults, without in any way presuming them to be inevitably followed in every case. Indeed, with his undergraduates Perry freely admits that students became frozen at different stages of passive detachment of dualist absolutism. Put simply, Perry's nine positions represent a move from an initial dualist perspective in which the world is perceived as

comprised of black and white, mutually exclusive polarities to one which the individual has come to a realization of the contextuality and relativity of the world and has then gone on to make a conscious commitment to one of many possible identities. In their exploration of these ideas on ethical growth and intellectual development as they relate to adulthood, the Syracuse Rating Group has also distinguished nine stages in adults' intellectual and ethical development.

The final stage of "developing commitments" is distinguished by an awareness of the effect that individual behaviors have on others and by a continuous search for new challenges. This search is undertaken with full knowledge that these challenges involve risks to one's self-esteem and that this final stage is never really "final". In leading up to this final stage, adults typically pass through stages in which they begin to view knowledge as contextual and become able to take on the perspective of others. This recognition of the contingency of knowledge inevitably brings about an appreciation of the socially created nature of knowledge.

Immediately prior to stage nine are those stages in which adults realize that only through making a commitment will a sense of individual meaning and responsibility for the creation of their personal worlds emerge. As Boud has noted with regard to the Perry scheme, "It is helpful for the teacher to have in mind that within the same class there will probably be students with radically different outlooks on what is taking place, who will be reacting in very different ways". An early application of the earlier stages of this framework to a sample of adult students at community college identified dualist, multiplist, and relativist positions among the adults studied. The study noted that faculty in community colleges typically teach content in the same manner, regardless of the intellectual development of

class members, and that faculty need to be more flexible in their pedagogic role to take account of the diversity of intellectual stages present in any class.

The Perry scheme represents an interesting area of future speculation for theorists of adult learning. Perry's contribution has been to posit an initial framework in which the transition from dualism to relativism to critically aware commitment has been clearly outlined. If these stages can be translated into specific outcomes, with sufficient flexibility of interpretation so that widely varying settings can be included, this might provide adult teachers with a means by which they could recognize the diversity of stages reached by different members of learning groups.

Alternatively, and in a more inductive manner, the frame work provides an analytical construct that one can apply to many different educational initiatives as a way of coming to understand the teaching- learning transactions occurring therein. There is little doubt that didactic pedagogic procedures in which learners are viewed as receptive repositories eagerly awaiting the deposits of experts are not likely to result in the development of critically aware commitment as outlined by Perry. Rather than looking to concepts of teaching drawn from research on traditional teaching methods, therefore, it might be more fruitful to consult concepts and practices drawn from related fields such as community development or community action.

The concept of the animateur is one such idea, and UNESCO has explored the manner in which training schemes to develop animataeurs might be established. At the very least, it is important to realize that between the authoritarian transmission of information to uncritically receptive automata and the nondirective, free-flowing realization of learner-defined activities lies a crucial

facilitation role. Facilitators have to be as wary of supporting every inclination, preference, or demand of learners as they are of forcing these same learners to follow a lockstep sequence of previously prescribed educational activities. In both instances learners are liable to develop an uncritical stance toward their own personal and intellectual development; in the one case because their opinion is never challenged or questioned, in the other because they are given no choice or chance to voice an opinion.

Either option denies the essentially transactional nature of teaching-learning, and both options pretend that challenge, creative confrontation, and self-scrutiny have no place in adult learning. Without these elements, learners may find their educational encounters initially comforting but they will sooner or later come to suspect that such encounters are not really educational at all. When this awareness finally dawns, the resultant withdrawal from participation will have the same significance and result from the same kind of frustration as that caused by the learner's being allowed no voice in the educational transaction.

Profound changes of various types throughout the world have caused profound thinking regarding the role that education must play in helping people enhance the quality of their lives. Compton and Parish suggest that at least three concerns must be addressed in some way through educational efforts:

- 1 The increasing gap between the rich and the poor; the gap between rich nations and developing nations.
- 2 The disproportionate share of the world's resources now allotted to dominant world.
- 3 The increasing awareness in the Third World of the double standard of living.

Such concerns as these plus the constancy and rapidity of change, suggest to us a need to help people make the most of their individual potential. Boucouvalas describes a standing regulation in Greece that captures this notion of promoting individual ability: "The view of as a self-sufficient and independent personality and as the agent of development". It seems that learner self-direction and self-directed learning skills are crucial to the achievement of this human potential.

The study of self-directed learning appears to be primarily western in orientation and interest, with little relationship many parts of the world. In fact, the majority of recent research, writings, and language related to self-direction in learning have emanated from North America. We thus believe that it is important to our success with adults as learners to take a more global approach in our understanding about self-direction in learning. We realize that not all our assumptions about learners and their abilities to accept personal responsibility will translate entirely from one setting or culture to another. However, this chapter's purpose is to present some reflections and understandings regarding the universality of self-directed learning principles and approaches.

We will present some background information before launching into discussions about self-directed learning in selected countries. Both of us have had many international students in our courses. Observing the successes and difficulties involved with facilitating their independent learning have provided us with some understanding of requirements across cultures in applying self-directed learning principles. We also have examined some of the international literature related to self-directed learning and have interviewed and talked informally with several people from other countries to obtain their views regarding such topics as autonomy, learner control, and instructor roles. Thus, what will

follow is a summary of the literature we have studied regarding self-direction in selected settings outside on North America. In addition, for two countries, we present a description of how indigenous adult educators believe that self-direction in learning would be possible in their respective countries. We also need to say something about the nature of self-direction in learning in various cultures.

Based on our reading and conversations with people from various countries, there seem to be many different ideas about what it means to study or plan individually. One country will have as an avowed policy the promotion of individual learning ability, while at the same time advocating participation in governmental sponsored programs to achieve such a goal. Another country will talk about self-education as a primary means for adults to learn, but the nature of the programs described would indicate to a North American observer that few opportunities exist for individualized decision-making regarding the learning process.

Another problem stems from the structural design of certain approaches intended to promote independent study. For example, a correspondence course that requires strict adherence to a planned route of readings and testing procedure may offer little freedom to the learner other than pacing or sequencing of micro-learning components. Ljosa and Sandvold, on the other hand, make a case for the various ways by which learners can exercise freedom of choice within the didactical structure of correspondence education. Moore describes how he thought about learner freedom in designing an Open University course. The course was based on: (a) a psychological climate that emphasized learner decision-making and experience; (b) an emphasis on self-diagnosis; (c) a personally planned route of study; (d) a tutor seen as a resource person; (e) some learner designed

evaluation criteria; and (f) an emphasis on each student's personal learning experiences. A wide range exists in interpreting and permitting freedoms such as these within the learning setting. As noted earlier in the chapter, some suggest that self-direction is primarily a middle-class, white phenomenon by its emphasis on the individual.

Even though some research has demonstrated that certain self-directed learning concepts hold across racial, economic, and social groupings, the concepts may not always directly apply in other cultural contexts. However, we firmly believe that as long as cultural context is recognized and respected, it is possible to apply many of the instructional and learning tips described in this book in any setting. There are many countries that should be examined in terms of their self-directed practices, activities, or philosophies. However, that needs to be the subject of another book as we work toward a better understanding of various implications for the way in which adults are helped in their efforts to maximize their potential. In this section, we touch on just a few countries in order to highlight interesting aspects of self-direction in different cultural contexts.

Scandinavian countries have a long history of adult education. Grundtvig's pioneering work in Denmark with the folk high school movement began in 1844. Grundtvig, in developing the folk high school movement, wanted an educational experience for adults that was residential in nature but small in scope. He also wanted a mixture of practical and theoretical work, supported by lots of discussion. These institutions therefore stress work in the group setting, and are aimed at the individual development of each person. In fact, their methods and environment are designed to encourage individuals of all social classes to broaden their personal horizons. Folk

schools have spread to many other countries in the past century and a half. Sweden has made several efforts to promote education for adults that is self-directed in nature. One stated adult education aim of the Swedish government, for example, is to cater "to individual preferences and needs" 1977 governmental ordinance called for learning opportunities to increase awareness of personal capacity, to develop independence, to promote creativity, and to foster critical reflectivity.

One of the most innovative approaches to adult education has been the study circle. These have been used to provide many citizens in Sweden with an opportunity to develop self-study skills. While the group emphasis of the study circle at first glance may seem inconsistent with notions of self-direction. Oliver states that historically in Sweden: "study circles encouraged self-directed learning and full participation, blending the intensive small group format with traditional Swedish culture-particularly small-town life and the face-to-face conversations of friends and neighbors". Svensson notes that more than 2.5 million people are involved in Swedish study circles each year, with 1.5 million of these women.

While not quite as popular, another important Swedish form of individualized learning is correspondence study. The country has three such organizations: "one that is authorized to hold examinations for formal educational institutions, one that provides study materials that do not lead to any formal qualification, and one that provides agricultural correspondence materials". Nearly 20,000 people each year enroll in correspondence study. In Norway, correspondence schools have long played a very important role in educating adults. In fact, Norway's Adult Education Act of 1976 was intended to influence

learning throughout life and "should give the core ingredient for self-managed learning throughout the rest of life". Finland, too, has several correspondence institutes that offers expert aid through study centres to assist individual students in their educational efforts.

The United Kingdom is perhaps most well-known in the area of self-directed education for its pioneering work with the open university concept. There are also many other opportunities for the learner interested in independent study. For example, the number of adults studying by correspondence in the UK is estimated to "range from 500,000 to 750,000 a year". Another imaginative attempt to foster independent learning took place at Malvern Hills College, the center for adult education in the rural English counties of Hereford and Worcester. Several adult students were having difficulty attending a regular college class. Thus, a Correspondence Tution Service was established, to "provide individually oriented programmes of home study supported by personal tutorials".

An initial diagnostic interview between a tutor and the student, tutorial assistance with learning projects, and home study correspondence courses are some of the available resources. Brookfield also describes his research, which examined the self-directed efforts of individuals not associated with any formal organization or institution. He chose twenty-five working-class individuals whose formal education had ended at age 16, and whose expertise stemmed from extensive study of, or involvement with, a hobby or personal-interest area. His research helped to advance earlier work, primarily in North America, related to learning projects. It also demonstrated that independent efforts to obtain mastery over some area of study can take place across a wide range of cultural and educational backgrounds. He concluded

that many adult learners will look to to other learners for information and support rather than to societies, organizations, and professional educators. He noted: "subjects would mention influential books and magazines but would preface these comments by declaring their 'real' source of information was their fellow enthusiasts".

Japan's progress in industrialization since the Second World War, coupled with its more recent emergence as a world leader in various ways, has prompted a variety of changes within the country. These range from a growth of pizza parlors and fast-food restaurants, to increasing disposable income for most people, and a constant contact with other nations. Such changes have also affected education in many ways, including the education of adults. As one example, open-university-type programs reach adults throughout the society. The pressure to be part of a societal group remains, but subtle changes are taking place in education. A Japanese, Seiichiro Miura, who works with adult education activities, was interviewed about adult education in his country.

Professor Miura was also asked how he would introduce learning contracts, frequently used in self-directed learning efforts, into the Japanese culture: "I will introduce the idea of the learning contract but it will be utilized within a group setting. I will need to introduce it slowly and find the ways it can work". Thus, Japan appears to be in a transitional state where the sanctity of the group is being reevaluated in terms of individual needs and wishes. This may be most clear in adult education effort with older Japanese. Sekiguchi describes a 1981 Recommendation Paper by the Central Committee on Education. Among the Paper's recommendations is a call for the older person's self-education.

in a classroom will not be adequate since there is a great difference between individual learners. Instead, individual learning methods are recommended as a more suitable way". Facilities such as libraries, museums, and similar institutions are suggested as organizations which need to play a more active role in meeting older adults' needs. Study courses on radio and television and correspondence courses are recommended as effective methods for the older person.

The changes that have taken place in China during late 1989 and on into the 1990s make it difficult to comprehend fully what the future holds. However, the last several years have been marked by some important changes relative to adult learning: "Since 1977, when the expansion and restructuring of adult education began after the Cultural Revolution, important changes have taken place in many sectors of adult education". For example, current radio and television delivery methods are patterned after Great Britain's Open University. The Chinese Television University opened in 1979 and provides several degree opportunities. In fact, TVUs operate at the national and municipal levels. Televised instruction is also used at factory colleges, spare-time colleges, and regular universities. Municipal television universities and corresponding study centers in a variety of settings cooperate with centralized programming efforts. They serve some 800,000 registered students and many more casual viewers who do not enroll credit. There are other forms of adult education in China that offer some opportunities for individualized learning. Correspondence courses are available, and individual tutoring is sometimes available.

In 1980 factory universities set up correspondence courses that enrolled 240,000 students. Zhou reports that there are some 32,000 people enrolled in independent correspondence colleges, and another 150,000 students

enrolled in 148 evening college correspondence divisions. The "visiting teacher" program also offers opportunities for a learner to work individually after the teacher provides some initial assistance: "In this program, literacy is taught by a teacher who visits the peasant, with home and labels common household objects the appropriate Chinese characters. The learner thus learns the characters as the items are used"

Traditional beliefs and expectations in Indonesia regarding learning have placed the instructor in a role as authority figure. In fact, learners have not been given many opportunities to assess personal needs as a basis for learning. These learners also usually expect the teacher to be an authority on whatever subject matter is being discussed. Furthermore, they view experiential learning activities, such as using various community resources outside the classroom, as a waste of time. They would believe that such time could more appropriately be spent in the classroom listening to an instructor. However, increasing levels of education among the population and a better understanding of teaching approaches outside of Indonesia among educators are indicators that self-direction in learning is possible with appropriate modifications. For example, one Indonesian educator studying adult education in the United States told one of the authors how he would apply various self-directed learning techniques in introducing family planning to community leaders when he returned home. During his initial contact with the leaders he would discuss the importance for the country of the content to be covered. He would also discuss with them their learning needs, based on their roles, tasks, and functions as community leaders. Because he would be viewed as the authority, he would come well prepared and make the initial presentation with the use of various audio-visual aids.

The participants would then complete a pre-designed, needs-assessment form, and come to some initial conclusions regarding personal needs. This educator would then lead a general discussion to determine needs, strengths, and weaknesses among the group. He would begin by listing learning needs on a chalk board or on poster paper, and ask participants to help him rank them. He would conclude with a summary of the needs, strengths, and weaknesses.

Then a description sheet of the content areas that could be covered during subsequent session would be distributed and discussed. He would make every effort to accommodate the uncovered needs, but would be very specific in describing those content areas that he believed must be covered because of official requirements of his own personal convictions, even if they did not match well with the rankings. After that initial session, he would spend time putting together the plans for remaining sessions. This would include determining who would be responsible for various content areas, what learning aids would be needed, what teaching and learning technique would be used, and what arrangements were needed for outside resources or resource leaders. Passive learning activities would be expected, although small group discussion could be designed for occasional use. If any individualized or experiential learning activities were desired or necessary, special efforts would be needed to make clear the importance of such experiences.

As evaluation in the form of testing would be the normal expectation, some efforts would also be needed to design the procedures and instruments. Thus, some of the self-direction procedures described in this book would be possible, but the instructor or trainer would need to explain such procedures very carefully and help participants understand how they would enhance the

learning. Cultural traditions and expectations regarding the role of the instructor do not rule out more individualized approaches, but adaptations based on an understanding of prior expectations of students and teacher roles would be required.

Even the small group discussion typically will center on questions posed by the instructor, although students feel they have some latitude in discussing areas beyond the instructor's question. Experiential learning activities will be looked at by most learners and instructors as a waste of time. They fear that such activities will take time away from the instructor's lecturing. Although a few learners would thrive probably believe that an instructor using such approaches did not know the probably believe that an instructor using such approaches did not know the subject matter and was employing them to cover up for inadequacies.

One Tanzanian adult educator studying in the United States felt that back home his biggest hurdle would be the unwillingness of his university administrators and fellow teachers to accept teaching approaches that placed considerable responsibility on the learner. Another problem area revolves around evaluation and grading. Many of the current traditions of grading were inherited from the British, and the result is usually a highly structured process. For example, many teachers are expected or even required to give a certain number of lower grades.

The Tanzanian adult educator mentioned above, who by the time of the interview had considerable experiences with self-directed learning in the classroom from his United States graduate training, felt that the use of a learning contract in his country would be problematic. The above points suggest that the employment of self-directed learning principles in

Tanzania would be difficult, at least initially, because of traditional expectations about education. However, one of the authors spent some time in Tanzania and observed some self-directed adult learning taking place at the village level. In fact, the country supports a national policy of "self-reliance," in which elected village leaders take on primary responsibility for local development.

In most Eastern European countries, a variety of independent study opportunities exist. Correspondence study seems to be quite popular for the learner who, out of preference or necessity, selects individualized approaches. Albanian workers are encouraged to educate themselves through various forms of education, including correspondence study. Correspondence is also one of the favored delivery methods for adult learning in Bulgaria and Poland.

In Germany, correspondence education is recognized as equal in value to other forms of adult study: "Those who acquire education in this manner are offered special facilities and encouragement, such as leave from work amounting to seventy-seven days per year while retaining the right to a full income". In Hungary, combining both correspondence study and evening courses, according to a 1975 study, "those who acquired a degree in this manner were 45.2% of the total number of people who received a university degree. In Rumania nearly 30 per percent of all adult students study either at evening school or through correspondence. Yugoslavia is perhaps the most progressive of these countries. It has schools of self-guided learners, developed through federal legislation, and other institutions through which the individual learner uses various educational resources, such as cultural centres, museums, and libraries.

The country also was among the first nations to

provide special study on the conception of andragogy, including both graduate and undergraduate study. Obviously, the events that have taken place throughout eastern Europe in the dawn of the 1990s will have an impact on the education of adults. While it is too early to speculate with any high degree of confidence, we believe that these changes signals potential for positive developments on the self-direction front. Only time will tell, through, what specific impact may take place. The issue of wider access is but one of many driving forces putting the impact and process of higher education under scrutiny. The following kinds of questions are now the subject of frequent speculation and, more recently, research:

What are students learning and why?

- In what kinds of learning processes are they engaging?
- What is the quality of their experience?
- How effectively and efficiently are resources being deployed to develop the potential of new kinds of students?
- What kinds of qualities and competences are being developed and assessed, and for what purposes?
- To what extent do flexibility, openness and choice obtain with regard to learning structures and opportunities?
- Do different kinds of students experience the education offer as 'relevant, useful and enabling'?

Are students being helped to 'learn how to learn', for a changing world in which social relations are more complex, professional authority and the effectiveness of traditional structures are being challenged, and knowledge and information increase at a rapid pace?

In this chapter, students, an increasingly influential

group of stakeholders but heretofore often invisible in such debates, consider the impact, process and structures of higher education. Their reflections on issues such as quality and responsiveness derive from their experience of having returned to academic learning programmes. The voices represented in this chapter come largely from those adults who are often at issue in access debates.

The literature on adults as learners in higher and continuing education tends to reflect the experience of largely white middle-class adults, often North American, who as students or educators have experienced a great deal of previous formal education. In this, they may be similar to other younger adults who have spent most of their school years feeling like this, and who remain under-represented in British higher-education institutions. The views represented here come from a multi-site qualitative research study.

Broadly, 32 different kinds of learning situations provide the basis from which these adults reflect on their experiences as learners. Overall, 48 learners participated in the study over the course of 8 research cycles, each involving a different formal learning context. Twenty-three of the total 32 who were interviewed individually, and who therefore provided in-depth learning histories, left school with few or no qualification. Only 7 in the study had experienced higher education previously.

Thirty-seven in the study were women: 6 were black. Thirty identified themselves as clearly working class, 12 as clearly middle class with 3 unknown. Nine found it difficult to make a distinction, but of this group, felt more working class than middle class. Six women were followed up, after they completed the diploma at Hillcroft College about which they were first interviewed, and had moved on to university or polytechnic degree courses. At the end of these second interviews, they had

the opportunity to reflect upon the transcript of our previous meeting at which they had anticipated their experiences of higher education.

Disjunction refers generally to sense of feeling at odds with oneself, as a learner learning in a particular set of circumstances. It is not the result of a cause-and-effect relationship but rather emerges out of mutually interacting influences, as well as past and present experiences of being a learner in different kinds of learning contexts. A sense of disjunction can be felt to be associated with who one is, where one is, and how one's present experience as a learner relates to previous or concurrent experiences, within and outside the formal learning context.

Disjunction can be associated with feelings of alienation, anger, frustration and confusion. In this study it always refers to a sense of fragmentation and involves issues of both personal and social identity. Disjunction sets up the potential for education and for miseducation depending upon mitigating circumstances from the past and in the current situation. When miseducation results, thus 'arresting or distorting the growth of further experience', the overall sense of identity as a learner can be fundamentally undermined.

Certain kinds of social conditions can lead to the damaging effects of such an experience becoming internalized. Alternatively, by chance, design or conscientious planning on the part of educators, disjunction can be constructively 'made sense of' and managed. This is especially true when various partners in the learning context become more responsible and accountable for what is occurring. This creates the possibility of future actions that can simultaneously compensate for, anticipate and manage disjunction. There are, however academic learning situations that, by

design, intent, or tradition, afford little or no possibility for individual or collective structured reflection on what it means to learn in that situation or on how the situation might be made more effective. The management of disjunction under such circumstances may be more challenging for some learners.

The extent to which adults feel able and willing to cope with disjunction, and the concomitant feelings of isolation and lowered self-worth that can be generated, seems to be tied up with many factors. These include the influences of previous learning and presumptions about education at home and school; experiences of learning and being a learner as an adult within and outside higher education; one's self-concept and overall sense of self-esteem at that time in one's life; the quality of the support and relationships available within and outside the education situation, and the kinds of compensating experiences available at the time in the overall learning environment.

In this study, adults described experiences characterized by a sense of disjunction in relation to the following:

- their expectations of and their initial encounter with the formal learning context;
- the degree of continuity between the new learning experience and prior ones, both within and outside formal education;
- their experience of the assumptions and approaches operating with regard to teaching and learning, and the extent to which these hard with prior expectations and assumptions about learning, based on experience elsewhere;
- the ways in which social differences and power relations were experienced and managed in the learning environment;

- the extent to which core aspects of their personal and social identity felt threatened or at risk in that environment;
- the management of multiple and often conflicting roles;
- the impact of contradictions between tutors' private and public stances; for critical reflection and analysis;
- the ways in which it was expected that knowledge and knowing could be legitimately explored in that learning situation:
- the nature of the dialogue, relationships and learning processes experienced in the formal learning context;
- the ways in which personal development and change were occurring;
- in spite of or because of what was occurring in a particular learning situation.

On the other hand, integration as equilibrium implies that one's sense of personal and social identity does not feel itself to be fundamentally at issue, or at risk, in a particular learning environment. Integration tends to be associated with a sense of equilibrium, or an 'all of a piece feeling'. Integration does not necessarily give rise to learning itself, but rather helps to create the conditions conducive to an individual learner being able and willing to learn in a particular learning situation. In other words, there is potential for benefit, and for education. Integration thus need not be associated with intensely positive feelings.

Integration can also refer to heightened feelings of self-validation, arising out of the extent to which a new situation compensated for prior experiences of disjunction elsewhere. Alternatively, it emerged as a resolution to disjunction involving some kind of invalidation of previously held beliefs, ideas or meanings.

It is within this context that disjunction can be experienced as a constructive starting point for learning. The critical difference between the experience of disjunction as an enabling rather than a disabling experience lies in the kinds of values, purposes and relationships which obtain in the learning situation.

A critical factor is the nature of the support available to guide the learner through the sense of confusion and fragmentation generated by the experience of disjunction and which enables him, or her to steer a path through it towards significant learning and change. In this study, such situation tended to be characterized by the adults concerned as feeling valued for who they were as people, and for their prior experience. Learning entailed active involvement and interrelating. Conditions associated with cycles of disjunction and integration, and indeed an overall sense of integration itself in connection with academic learning programmes, included the following: the active use and appreciation of different forms of knowledge, the making of connection across disciplinary boundaries, and a positive valuing and use of personal and social differences within a group. For many learners in this study, to experience learning situations characterized by such conditions and an overall sense of integration, often served to repair severely damaged confidence and self-esteem, and to compensate for prior experiences of education.

Alternatively, a relationship with a particular tutor could positively mediate an overall sense of disjunction with regard to that course or learning context as whole. Others found that experiences of disjunction on a course could be positively mediated by prior experiences in which confidence had been built, and self-esteem with regard to one's learner identity and potentiality began to develop. Relationship with peers and spouses also played a vital role in enabling learners to make sense of and

manage experiences of disjunction. None the less, many of the learners in this study seemed to have required repeated experiences of integration to enable them to feel sufficiently resilient and able to withstand and indeed manage forces which could otherwise damage them. Even then, the path of the development of such resilience and confidence was by no means linear.

Certain situations could spiral the learner back into feeling the scars of prior experiences, although in this study no one experienced the feeling of going back to 'square one': earlier experiences that had given rise to a sense of integration had created an internal store upon which to draw when necessary. To survive, and thrive, in academic contexts, however, it seemed that some of these experiences needed to have occurred within formal education.

It would be well beyond the scope of a single chapter to illustrate the many ways in which the concepts of disjunction and integration are grounded in the data. Here, however, I shall draw upon a specific block of material from the study, which was generated in one of two ways. During the course of the initial research cycles, would often ask participants directly about what they wanted and needed from teachers in higher and continuing education.

Each of approaches involved participants in a particular kind of imagining process in relation to their needs and previous expectations. In undertaking it, they teased out the kinds of learning situations and relationships that they saw as conducive to integration and thus to the possibility of education rather than miseducation. The role-play approach, especially, helped to draw out issues which most mattered to these adults if they were to feel willing and able to learn in academic learning situations. The following main themes emerged

from the data elicited by these two techniques: the notion of personal stance in teaching and learning; recognizing and respecting differences; 'unlearning to not speak'; the role of relationship in mediating disjunction; and 'learning-in-relation'. Each of these is dealt with below, illustrating from a particular angle various aspects to the disjunction-integration formulation.

We often speak about teaching and learning as if they were simply a function of subject expertise, skill and method. These adults' accounts, however, illustrate the extent to which for them, the quality of teaching, and indeed of learning, is mediated by the 'personal stance' of the teacher. I used this term in the sense of Salmon who suggests that 'the material of learning has traditionally been viewed in different terms from those that define the learner'.

In the accounts which follow, these adults' perceptions and experiences of teachers' personal stances towards them as adult learners are seen as vital to their feeling able to enter into the possibility of education. For example, Gaynor was a working-class woman in her mid-fifties who returned to do an academic diploma which would enable her to go on to a degree course. She had worked largely inside her home for many years and had little confidence and low self-esteem when she entered Hillcroft College.

Speaking within the context of the role-play described above, she implores me to remember what it is like to have no knowledge of that subject at all. Rhoda, long unemployed and with little sense of self-esteem or direction, stresses the negative impact of tutors who position themselves towards their material, rather than towards the student. She is describing here the extent to which she had felt progressively silenced by what she had experienced from certain tutors.

Rhods: They have to be hearing what they have to say. I constantly get interruptions which makes me feel, 'Should I be here?'... And they are always so busy. I always feel I'm taking up his time.

SWW: What about attitudes?

Rhoda: I always have the feeling with my tutor that he's 'in the know'. He does most of the talking. He should be more laid back and draw me out more.

Frank was a lower working-class man and previously a labourer who read 12-15 books a week, across at least six subject areas. He re-encountered a former teacher whose previous attempts to encourage him at school had been 'too little too late'. She persuaded him to return as a mature student to an FE college to do O-levels. He did A-levels there also and, after an interval, went on to a polytechnic course. He had, however, consistently encountered structural and attitudinal barriers in his attempts to engage with formal learning contexts. He felt that, during those years of struggle, it was only in political groups that he was able to find the intellectual stimulation and dialogue that he actively craved. Here, he too emphasizes the importance of a personal and social dimension in his interactions with teachers.

Unlike many of the women in the above accounts and those that follow, however, he communicates a certain resilience and autonomy in his expressed wish for confrontation and challenge.

Frank: Their responsibility is to point out the central core of the basic theory, to confront you as an individual. You can then decide if you agree or not ... But they must draw people out. Reach for their potential. Help you to engage with central theory. It is an interactive relationship. This requires knowledge, skills and personal qualities. Also, they must be sensitive to personal problems because these will distort the learning process.

SWW: What skills?

Frank: An intellectual grasp. A degree of lucidity with which they can explain. Must be evaluated on the extent to which they can facilitate people's interest in and ability to deal with knowledge and their capacity incorporate within the learning situation the views of the students. Especially the older ones. Which may be in direct contradiction and which may not be supported with six million academic references, but practical experience.

Fran was a working-class woman who throughout her initial schooling aimed to be a hairdresser. She eventually became a lecturer and teacher in this field, to the amazement of her family, since they had always seen her sister as the 'academic one' and Fran as the 'practical one'. The ways Fran strived to use her intelligence and creativity in each work situation, however, often seemed to put her at odds with colleagues.

One summer, after she had left an unsatisfactory work situation, by chance she came upon information about the local polytechnic's willingness to accept adults without A-levels. She enquired, out of curiosity, and was offered a place. She describes running all the way home, in panic and disbelief. She spent the entire summer trying to persuade officials that, if they were willing to give her a grant to study for three years, they could give her one-third that money to set up her own business as a hairdresser. Failing in this, she began at the local polytechnic in the autumn.

Fran speaks about the need for someone 'with communication skills, and for tutors who can 'break into a language that you can understand.'

Fran: I could understand what they were saying it would be lovely. They need to talk to me and explain it to me. I would expect them to be positive

and encouraging. Usually, if you ask a question, you end up with a negative ... They don't use a reinforcing way of learning. They just sit there and rub up their own ego... One thing they need to know is how to be a teacher. That's the one thing they don't know.

SWW: What does that mean to you?

Fran: If I have to sit and take notes for an hour, which is far too long, I need something that is constructed in a sane pattern. So when I read my notes afterwards, they make sense to me... They ought to be able to use experience, and break into the lecture, without feeling you are taking them off at a tangent... They can't convey what they know... They don't connect it with anybody else's subject matter.

Moreover, her own experience as a hairdressing lecturer, after years of apprenticeship and training, led her to feel incredulous that teachers in higher education had preparation only in their subject area.

Adults in the study continually spoke about the importance of being acknowledged and respected for their differences. The interview questions constantly revealed ways in which a failure in actions, not just words, to recognize and respect their differences could prove a source of disjunction. Connie was a middle-class woman who had worked entirely inside her home and had taken primary responsibility for parenting. She reached a point where she bought an IQ book, because she felt no better than a 'cabbage'. She returned to higher education via an FE college that catered particularly for mature women returners. This experience had been characterized largely by integration, with continual discovery and challenge emerging out of the quality of the relationships with peers and tutors.

She found her transition to the polytechnic

unsettling in many ways. Here she emphasizes the effect of different kinds of personal stances of tutors upon her as a learner. In particular, she highlights a confusion she elaborates in other parts of our interview: namely, that tutors are adult learners too, and therefore how can they not understand differences? She speaks about the need for tutors to remember that they too are mature students and to use that as a way of relating to mature students. They come with experience. How they see us affects how they interact. They must be helped to see that., 'If you're motivated, you'll get it.' Your pressures are seen as a testing ground. For example, 'You'll be a good rather than realizing the pressures you are under. I wouldn't want the structure and the knowledge to be changed. Just to have more time, and more emphasis on motivation. But sometimes, I just cannot cope. There must be a positive discrimination towards older people.

Todd, a working-class man, had struggled all through initial schooling, feeling out of place in terms of his artists interests. Throughout his education he had felt pressured to be someone he was not, symbolized by the efforts of teachers to turn him from left-handedness to righthandedness. He left school with no qualification and went to work in the markets. Before returnintg to do a degree, he had been both unemployed and a musician, having discovered a relationship with another musician through which he could develop these interests and talents. Here he elaborates on the differences cited by Connie and, like her, stresses the pressures on him in terms of the complexity of his life: in this case, as a musician, as a parent, as one of many in this situation who were not well-heeled financially, and who had anything but the prior learning and life histories of more traditional students. He asserts the need for tutors to recognize

That we're not just students. We have an outside life too. We suffer the same problems. We're not purely a brain. We're human beings. That's the way it is with normal education. It's not right. But they think they can group us in a lump. Shows a lack of responsibility. Here, they still teach you like you were secondary school. It's the same process: socialize, work, see tutor. But they must know about people like when they are starting to flag. Like this guy who was living in a squat and had to take casual work for four weeks. They have to have skills of working with people: diverse people. People who were delinquent, mentally ill. It's not so much they are misfits. There are lots of really clever people. It's just that they should not be treated as if they were academics...No one here has asked me what I am going to do, much less what I have done.

Recognizing differences for a number in the study also meant recognizing previous damage and actively repairing confidence, particularly in the case of women. Sally is another working-class woman who experienced redundancy and separation before her return to study at Hillcroft. Initial education for her had been fraught with one trauma after another. Here she speaks out of her experience of returning to formal education in a women's college where small groups were a key feature of the learning environment. She stresses the importance of recognizing differences in women's pacing and patterning in group dialogue. Once again, the relational aspect of teaching and learning emerges as a central feature:

I think that is one of the pivots of adult education. Don't have too big a group. They will be overawed. If so, some will be quite vocal. You must use them, take their ideas, but don't let them overawe the others. Encourage those who are quiet. You've got to encourage people to speak, those who are quiet.

Don't bully or say, 'What do you think?' I would need time to think about that, but I am sure that there are subtle ways in which you can include people in small group discussion. But the women I know, the women are quite enthusiastic. But the more they get to know you, the more they will open up. I think they are also very afraid of examination situations and formal learning and they have to be very gently introduced to this.

Sally experienced considerable disjunction arising from the contrast between her experiences at Hillcroft, and her university science-based course. In the latter context, she felt an acute sense of fragmentation with regard to the treatment of the discipline, the process of learning, and the underlying assumption about knowledge and research operating in that environment. Although there was an essential coherence across the latter three, it none the less made Sally feel fundamentally at odds with herself and that environment.

The disjunction and subsequent anxiety generated by this situation focused her attention on whether and how she could cope, at the expense of academic achievement. Here she describes the other kinds of forces that can diminish or enhance resilience in a learning situation. She reinforces the findings of previous research that women often return to higher or continuing education at a time of trauma or transition in their lives. Here she speaks again about the need to 'repair confidence'. Her conviction indicates how much she too had spiralled back into self-doubt in her new learning situation:

Young people nowadays are much more confident, but when women get to my age and are returning to learning, usually and not always, it is for a good reason. They've lost their husband through divorce or illness, and

they have suffered some kind of traumatic experience and need to make a living and they are very very traumatized. In a delicate state. The only way you can describe it is that. And they need not only the ability to learn, but their confidence building. They need to be able to talk about their worries and fears and they need, perhaps, extra time given to them, because they might find it harder to learn after a big gap.

For Sally, integration entails being actively engaged in a learning process which involves actively relating to others, building on their contributions, and gently nurturing confidence. However, she and others often referred to the ways in which they could feel silenced by an intervention, often male—although few conceptualized it in gender terms, and virtually none in feminist terms. But the sense conveyed is that of feeling 'stopped in one's tracks'. Often accounts of such situations awoke memories of being negatively reinforced for being assertive and speaking with conviction. Such forces had taken their toll on women's sense of self-worth and of possibility as a learner.

Karen is a working class woman who had worked largely in secretarial jobs, and had eventually found her way to Hillcroft. She implies how easily tutors can, even unintentionally, abuse their power to the detriment of the learner. Later, at university Karen experienced considerable disjunction in the form of a major writing block on a humanities course. Although the method of teaching was largely in small groups, she felt severely silenced by certain attitudes and stances on the part of some male tutors and later a male counsellor. Here, speaking from the perspective of Hillcroft, before moving into this learning situation, she talks about the need for tutors to approach people, 'on a one-to-one basis, a personal basis, not as teacher-pupil.'

SWW: What would I need to know about people?

Karen: To be able to assess personalities. To know who can take harsh criticism and the people who need drawing out more. To know the things that draw them out. Know people's names. That sounds silly, but if you call people by their names, you get this sort of bridge. But the main thing is to treat people as an adult, rather than teacher-pupil... Don't be too harsh in your criticism in certain situations. Not to be patronizing, but put yourself in their position. These women have gone through the same situations as you have. You should approach them on an equal footing, although you are 'imparting the knowledge'. You're sharing it, not dictating it.

Godfrey and Janice also consider the kinds of learning situations that promote their development and learning to fuller potential. For them, issues of personal and social identity, and the experience of differences, are central to the possibilities of education or miseducation. In their learning situation, and in the wider world, the majority group wields a great deal of power and control over opportunity for them and other black people.

Godfrey's description contrasts to some extent with the accounts of the women above, in the sense in which he stresses his autonomy and strength in the face of adversity. None the less, he conveys how a respect for differences and a recognition of the complex social arena within which learning is taking place can be fundamentally at issue for some adult learners. As such he elaborates themes introduced above. Here, in the context of a group interview, he and Janice talk about what they need to feel able and willing to learn. They describe what they experience when they learn with other black people in comparison with how it feels in an academic situation, where different kinds of judgement and power are operating, especially when they are in a room full of white people.

Godfrey: When I am challenged and criticized by anyone, I feel every part of me is learning. When cornered, for example, on a platform, giving a speech, I am all angry and aggressive when I'm at my height. If I'm in a group of people and everyone's against me, I learn most. When I must change my self and assimilate what I've learned. Give different interpretations to things. Why, I enjoy people not agreeing with me. Find it beneficial, useful.

SWW: Does it matter who the person is?

Godfrey: I never feel comfortable in a room full of whites. Never relaxed. Always on guard. Automatic. Immune to it. Unconscious. I speak in a particular manner. More passive in the way I present myself. Not if in a group of black people. More relaxed. It's me! Can curse, do anything. Like when you're angry, revert to your past experience. To learn fully, to be total, must be amongst black people.

Janice: Certainly think you have to be on guard when you are with. Depends on position, authority. Must think of that. Must infringe on you as a person, depending on the group you are in...

Godfrey: I need respect in my environment for me to learn. Plus a stable psychology!

Janice: I feel much more relaxed with a black community group. Because there, constantly raising other people's consciousness.

Godfrey: Also, at these times, when black people challenge you with something. But if they challenge you, that is your view and this is my view. Just leave it. No drive, no push, no encouragement to continue ongoing dialogue. With group of black people, if someone says, black people are inferior to white, you will argue, say, 'No, no, no.' But in terms of their point of view, will read about it to see where they are coming from. But if white person, will ignore it.

In this account, they engage centrally with dimensions of

learning that are at the heart of disjunction and integration. They speak about 'to feel total', 'to learn fully', 'you as a person', 'It's me'. They convey the extent to which a certain sense of integration in their personal and social identity must be felt, in a context of constructive support and challenge. They talk about needing 'a stable psychology' in order to derive maximum benefit from a learning situation. Here they suggest the extent to which they have felt it necessary to always be 'on guard' in the learning situation.

Godfrey and Janice experienced a great deal of disjunction of their course, but this was mediated by a number of influences: their opportunities to Reflect on their experiences with other black people, both within and outside that learning situation; their relationship with some significant-other peers on their course who could help them to keep in perspective what they were experiencing; their determination to get the piece of paper and more power, whereby they could influence the situation of other black people; and finally, the extent to which at the end of their course, tutors began to engage with them in a constructive process of reflection and showed themselves to be valuing actively the perspectives and experiences they brought to the course. Both were involved in advising on issues of process and curriculum, in order to enhance possibilities for education, rather than miseducation.

In these accounts, from those who, not just in terms of age, but also in terms of gender, class and race, have traditionally been under-represented in higher and continuing education, the complexities and struggles in 'unlearning to not speak' become manifest. The possibilities for experience of disjunction, rather than integration, for miseducation, not education, become clearer.

The possibilities for disjunction can be significantly heightened when some of the sources of disjunction remain invisible to, or are actively denied by, tutors. Ethel is another working-class woman who never associated learning with school. She, like many others in the study, found herself on a course at her local polytechnic more as the result of chance rather than design. She experienced considerable disjunction throughout her course, particularly with regard to the emphasis placed on what she regarded as 'knowledge for knowledge's sake' and the extent to which she experienced higher education as an arena where 'they are playing intellectual ping-pong with other people's ideas' rather than creating, originating. Her project work created a kind of oasis for integration, thus playing a significant role in compensating for the disjunction she was experiencing overall: 'My only original work on this course was my research, I loved that.. From June to March I worked non-stop.' A particular tutor also played a key role in enabling her to manage what she was experiencing. She acknowledges the personal and institutional power that tutors have, and the extent to which this can feel enhanced by the ways in which they choose to use their intelligence. Her account suggests the potentially destructive impact of such power when, for example, the norms of a course, department or institution favour attack and competitive argument as the primary means for 'building people up' intellectually.

Alternatively, as in the case of Godfrey or Janice above, such different kinds of power can also combine with social power, something that was at issue for many on the course—particularly when they were confronted with learning situations where there were few people with whom they could socially identify, amongst their peers or the staff.

Women's voices predominate in this study, and in

their accounts there seem to be fundamental assumptions about learning that can be at odds with the kinds of assumptions about knowledge or teaching and learning that can predominate in academic learning environments. The themes of 'learning in relation' and learning as a process of making connections recur again and again. For many adults in the study, there seemed to be a vital need to make connections: with one's life, with other disciplines, with issues that personally mattered and with experience that was both, prior to and had also emerged out of that course. For example, Fran talked about how, in her experience, don't connect with anybody else's. For Fran, subject matter is as much 'in her' and in her exas it is in books or in academics' heads. There is nothing in her experience perience that has taught her to discriminate between these forms of knowledge, or to elevate one form above another. To deny the validity of her forms was to deny the validity of her personal and social identity, and her prior experiences of learning particularly outside formal education.

Sally speaks here also from tthe context of her university course where as a result of the disjunction she was experiencing she has a heightened sense of the kinds of conditions in which the probability of integration, and therefore of education, is increased:

I think that one of the first things I would say to a student is that everything connects. I had no idea until I came here... So if I were a lecturer here, I would ask others what they were teaching so I could make the connections in my mind and then put it over to the students. Because that is one of the things that amazed me. That no subject is an island. All interconnect and interrelate. And same with the students: they all interconnect and react with each other and need to bounce ideas off each other.

The theme of interweavingg - across ideas, subject

boundaries and in the context of one's relationships with peers and tutors - is vivid here. For many of the women, not to learn in relation, and in ways that enabled them to work from and build upon their existing strengths and understandings, was to put at risk a fragile sense of self-esteem. Those kinds of conditions seemed to nurture trust in one's own voice, without feeling that powerful forces would intervene either to silence that voice, tell it it was wrong, or revive the feeling that to speak, to write, to create and have access to knowledge in higher education was not really for 'the likes of them'.

Adult learners do not bring their experience with them into education; they are their experience. But the answers to the real complexities and challenges of this idea do not seem to lie simply in modular programmes, access courses, distance-or open-learning initiatives, experiential learning or andragogy. They lie in much finer nuances of expressing respect, concern and care for individuals, and in giving priority to the need for adults to build upon and make sense of their experiences within the context of their own and others' 'life worlds'. Issues crucial to wider access—such as impact and process, boundaries and partnerships and institutional structures—gain in meaning when they are examined from the perspective of learners who, in their bones, can feel the interrelatedness of these dimensions to their experience of learning in higher and continuing education.

Moreover, probably better than any of us they can see if and when the Emperor has no clothes. People may find it hard to accept that their personal models are not the world as it is but are constructed realities and they are not soundly based in absolute truths. When faced with the challenge of, people may be unwilling to accept the responsibility which goes along with the acknowledgement that it is they that construct their own

world views. For many, it is more acceptable to believe that their worlds are imposed upon them by the way things really are.

These adults present us with the opportunity to raise fundamental questions about quality and responsiveness from perspectives entirely different from those that usually figure in such debates. For example, to what extent and why do we feel able to assure new kinds of learners of the possibility of education, not miseducation? How do we know if we offer to new kinds of students an education that enables, rather than compounds, previous disabling forces: What more do we need to do and which of our many strengths do we most need to build upon? In these adults' stories, we find the clues as to the kinds of issues we need to address if we are to ensure that wider access remains concerned with more and different students and quality for all.

By reframing the problems, and by exploring alternative solutions, we may very well create new kinds of pathways to enable those of us in higher education to move with integrity and greater clarity through what may now seem only a tangled thicket of demands from too many stakeholders. And in so doing, many other adults may approach our doorways, confident that here we do not just imagine the future, but here the future is lived.

Secondary Education

The National Council of Educational Research and Training (NCERT) is an apex resource organisation to assist and advise the Central and the State Governments on academic matters related to school education. The Scheme is directly implemented by the Ministry of Human Resource Development. It provides academic and technical support for qualitative improvement of school education through its constituents, viz. (i) The National Institute of Education, New Delhi, (ii) Central Institute of Educational Technology, New Delhi, (iii) Pandit Sunderlal Sharma Central Institute of Vocational Education, Bhopal and (iv) Five Regional Institutes of Education located at Ajmer, Bhopal, Bhubaneswar, Mysore and Shillong.

The NCERT has been presented with Asia and the Pacific Centre for Educational Innovation for Development (ACEID) Excellence in Education Award for 1998 in recognition of its outstanding contribution to the work of UNESCO, ACEID and the APEID programme it administers. Highlights of the programmes conducted during 1998-99 are given below.

Early childhood education

In the area of Early Childhood Care and Education (ECE) the focus remained on training of ECE faculty of District Institutes of Education and Training (DIETs), strengthening of preschool education component of

Integrated Child Development Scheme (ICDS), coordination of ECE project in 12 participating States, development of video and audio programmes for training package in ECE, documentation and dissemination of information through the newsletter *Glimpses and Aabhas*.

For promotion of elementary education instructional materials in language (Hindi), mathematics, art and environment education were developed for Classes I and II. After getting feedback at the regional levels, the document *The Primary Years* was published. The Fourth International Seminar on the theme 'Researches in Learning Organisation, Community Participation and School Effectiveness at Primary Stage' was organised and follow-up action has been taken on action points drawn from the researches presented in earlier three International Research Seminars. Academic support to the DPEP States was provided to devise and implement instructional materials and training strategies for enhancing the competence of teachers to handle classroom situation. Resource support in the areas of Multigrade Teaching, Development of Diagnostic Tests in Language and Mathematics for primary classes, Evaluation of Primary Level Textbooks, Development of Training Modules for Key Persons and a study of classroom processes in relation to the Antecedent Factors and their Impact on the School Outcomes were some of the activities carried out under DPEP.

In addition, evaluation of Balika Shivar programme under Lok Jumbish in Rajasthan, continued. On the request from Uttar Pradesh Basic Education Project Board, Lucknow, Evaluation of Children was undertaken in the three districts of Varanasi, Sitapur and Nainital.

The focus of Non-Formal Education (NFE) programmes remained on resource development in states and voluntary organisations. Training programmes were

organised for Non-Formal Education faculty members of SCERTs/SRCs and State Level Key Persons in Non-Formal Education and Alternative Schooling (NFEAS) and for senior functionaries of voluntary agencies getting grant from the MHRD. Towards development of training package for District Resource Units (DRUs) of DIETs and voluntary agencies, the job analysis was done, required competencies have been culled out and a process-based manual has been developed. Studies on (i) status of NFE Programme at Upper Primary Stage in India (ii) status of SCERTs in the field of NFEAS, (iii) difficulties faced in teaching-learning of Hindi at primary level NFE centres and (iv) effectiveness of NFE for lower primary stage in Bihar, Haryana, Rajasthan and Uttar Pradesh are in progress.

Resource development and capacity-building received attention in the context of Education of Girl Child. A data bank of Women's Education and Development is being developed. A study of the impact of incentive schemes on the progress of education of girls from disadvantaged groups (SC/ST/ OBC /Minorities) of Madhya Pradesh continued. A national workshop was organised to develop a Curricular Framework for a Gender Sensitive Life Skills Programme. A handbook on *Balika Shiksha Mein Gram Shiksha Samiti Ka Sahyog—Ek Disha* for training of Village Education Committee (VEC) members was prepared and reviewed.

In order to promote education of SC/ST children attitudinal issues among teachers towards SC children are being identified to develop a training package for changing the attitude of these teachers. The first draft of the conceptual paper on 'Changing Attitude of Tribal Area Teachers', has been completed. A textbook for Class I for Saora tribal children in Orissa, has been finalised. A training package is being developed on the content and methodology of tribal language training for non-tribal

teachers in Tribal Area Schools in Orissa. A study to determine the efficacy of the Ashram schools is in progress. Under DPEP a conceptual workshop on Planning of Tribal Education was organised and technical inputs in the production of textbooks for tribal children have been provided during the National Debate on Bridge Language Issues organised by the Educational Consultants of India Ltd. (Ed.CIL.).

For promotion of education of minorities a sample survey of the extent of educational benefits derived out of the Centrally Sponsored Schemes for minorities (Muslims) has been taken up. Under the study 'Analysis of Existing Curriculum in Government- aided Maktabas/ Madrasas' data has been collected. Analysis of data is in progress.

In the area of Special Education handbooks for primary school teachers—(i) of Low Vision Children and (ii) for teaching Hindi language to Hearing Impaired Children in Integrated Schools—and a guidebook regarding resource facilities in common schools for children with special needs have been developed and are under print. Handbooks for transaction of Mathematics Curriculum to Visually Impaired (Blind) Children and a source book for teachers in the area of Mental Retardation are also being developed. The NCERT has also undertaken the evaluation study for Integrated Education of the Disabled (IEDC). Teacher training has been undertaken for India-Australia Training and Capacity Building (IATCB) Project initiated by the Government of India and for primary school teachers from various Kendriya Vidyalayas.

Under the area of Computer Education the activities undertaken included establishment of the Computer Resource Centre at the NCERT headquarters, development of courseware on select topics in school

curriculum, NCERT's Website on the Internet and training programmes for members of academic and administrative staff of the NCERT in the use of computers. A book on the Internet as an educational resource and computer courseware using multimedia technology is being developed. Fabrication of Primary Science Kits, Integrated Science Kits and Mini Tool Kits for despatch to states and finalisation of teacher's handbooks of activities for Classes VI to VIII for integrated science kits are in progress. Thirty-two trainees from ITIs were trained in plastic moulding technology and seven apprentices in various trades are under training.

Major thrust of activities in the area of Vocational Education remained on training of personnel and development of materials. Orientation programmes for the key functionaries of the implementing States were conducted. Teacher training programmes in the area of Sericulture, Commercial Garment Designing and Making, Accounting and Auditing, Marketing and Salesmanship and Entrepreneurship Development and short-term training programmes for the key functionaries were organised. Working group meetings were held to develop a handbook on vocational guidance and counselling, development of national vocational qualifications in building maintenance area and to examine various provisions in Apprenticeship Act. Working Group Meetings are being organised to review existing curricula and for development of instructional material in Vocational Education.

The NCERT also organised a UNESCO-sponsored In-country Training Workshop on the Development of the National System of Vocational Qualifications, three Golden Jubilee Regional Seminars on Vocational Education for Rural Development and four National Seminars in the area of Horticultural Vocational Courses,

Food Preservation and Processing, Transport Sector and Work Experience/SUPW. Six video snippets of short duration were produced and Hindi translation of Curriculum and Instructional Materials was carried out.

Evaluation of vocational education programme in Tamil Nadu, Punjab, Haryana and Chandigarh is being undertaken. The work on development of Handbook of Vocational Guidance for the students of Secondary and Senior Secondary Schools, career conferences, one for each Lab. School of Bhopal, publication of Quarterly Bulletin, organisation of National Vocational Education Competition and exhibition and production of video programmes for popularisation of Vocational Education are in progress.

Under technical/resource support to School Education Boards two workshops were organised for Haryana and Mizoram Boards of School Education. One issue of the Examination Reform Bulletin has been circulated and the other will be ready soon. Studies on (i) finding reasons for non-implementation of Continuous Comprehensive Evaluation (CCE) in schools at elementary level, (ii) Analysis of evaluation practices in Chemistry practicals at +2 stage in various Education Boards in the country, (iii) critical analysis of question papers of various subjects at +2 stage in some Boards of School Education are in progress. Language exercises in English for Classes IV and V of KVs are being developed.

The Post-Graduate Diploma in Guidance and Counselling 1998-99 is being conducted with 31 trainees. An enrichment course in Psychology of Teaching and Learning for DIETs personnel is scheduled to be organised in January 1999. Studies on (i) Analysis of the science textbooks of Secondary School stage with reference to the nature of science, attitudes, value towards science and its relevance for daily life. (ii)

Predictive potential of selection procedure for performance in counsellor training programme and on-the-job performance, (iii) Critical analysis of educational psychology curriculum of elementary teacher training in India, (iv) Schooling in Mirambika, M Adolescent perception of social norms have been completed. The work on studies 'Guidance Research in India' and 'Counsellor in the Making: Status and Development', is in progress. The developmental activities like (i) Development of a curriculum in educational psychology for elementary teacher education, (ii) Counselling case management: Development of a practical guide, (iii) Teacher questioning in classroom: Development of resource material, (iv) Development of psychology curriculum at +2 stage, and (v) Development of popular psychology series are at various stages of completion. The enrichment of Guidance Laboratory, National Library of Educational and Psychological Tests and Career Information Centre is continuing.

The Sixth All India Educational Survey (AIES) with 30 September 1993 as the date of reference has been conducted jointly by the NCERT and NIC in collaboration with the State Governments. Studies on (i) Evolving Statewise Sampling Design for Sample Surveys in Education, (ii) Estimation of Single Age-wise Enrolment at Elementary stage, (iii) Enrolment of Non-formal education centres, Unrecognised Schools and Recognised Schools - A Sample Survey in Delhi, and (iv) Stagnation and Dropout at Primary Stage are in progress. The second Foundation Course in Qualitative Research Methods using Statistical Package for Social Science (SPSS) was conducted. The strategy for dissemination of data of the Sixth AIES is also being developed.

Apart from the constituents of the NCERT undertaking research, the Educational Research and

Innovations Committee (ERIC) of the NCERT provides financial assistance to outside institutions/ organisations for research in priority areas. A Researcher's Seminar to monitor the progress of ERIC-funded projects was organised. Two meetings regarding framing out priority areas for ERIC-sponsored research projects were held. Many projects were completed and reports received. Manuscripts of two issues of the Journal of Indian Education, three issues of Bhartiya Adhunik Shiksha and one issue of Indian Educational Review were prepared and printed. The fifth issue of Indian Educational Abstracts was brought out. All the chapters of abstracts of the second volume of Fifth Survey of Educational Research are under print.

The work has been initiated for the reconsideration of the approaches to and framework of curriculum in social sciences, languages and art education. The linguistic competencies attained by students of Arunachal Pradesh in Hindi were evaluated. Textbooks in Sociology, an Atlas for the groups with special needs, a book on Human Rights Education, workbooks on practical aspects in Accountancy and a handbook in Economics were developed. Draft material of Sanskrit Grammar for Classes VI to VIII was reviewed. Second supplementary book for Class VIII was finalised. Songs of Freedom and Unity were selected. A training package for key persons for teaching of Hindi was tried out and 32 post-graduate teachers were trained on selected topics. Work relating to PSLE Project of Singapore was also completed. The promotion and publication of good quality children's literature continued by rewarding the authors and illustrators of children's literature in 19 languages. Comparative studies of school curriculum of some selected countries in Social Sciences, History, Geography, Economics, and Commerce are in progress.

In the field of Science and Mathematics, the task undertaken included (i) Curriculum revision, (ii) Nurturance of talent, (iii) Development of instructional materials for talented students and teachers, (iv) Popularisation of Science and Mathematics through state level and national level Science exhibitions, (v) Development of laboratory-oriented activities, low-cost experiments, laboratory skills and new courses in practicals, (vi) Activities for Mathematics laboratory, (vii) Bringing out School Science journal, and (viii) Training of Navodaya Vidyalaya PGTs in Physics, Chemistry and Mathematics. In view of major changes in the curriculum of Mathematics, 'supplements' for Classes XI and XII were developed. Popular Science books under the project 'Reading to Learn' are also being developed in new and applied areas of Science.

The NCERT extended all support to the Centrally Sponsored Scheme of Teacher Education, District Primary Education Programme (DPEP) and SCERTs/SIEs. The Regional Institutes of Education (RIEs) at Ajmer, Bhopal, Bhubaneswar and Mysore continued organising pre-service teacher education programmes, viz. (i) four-year integrated B.Sc. B.Ed. course and (ii) One-year M. Ed course with specialisation in Elementary Education. In order to meet the needs of in-service training of teachers and other educational personnel several programmes were undertaken by the RIEs as well as by other constituents of the NCERT. Training materials, packages in different subjects, and modules were developed by the RIEs for teachers/ teacher educators. The Centrally Sponsored Scheme of Special Orientation for Primary Teachers (SOPT) is being organised. Studies on (i) Operationalisation of the Scheme of DIETs, (ii) Teaching Effectiveness of Primary Teachers in relation to their Educational and Professional Background, (iii) Evaluation of Implementation of SOPT

Programme in Different States, (iv) Status of SCERTs/SIEs, (v) Fifty Years of Teacher Education in India: Appraisal, Future Perspectives, (vi) Innovation of Teacher Education and (vii) Case Studies of Autonomous SCERTs of Delhi and Kerala are in progress. A framework for participative and database system of Teacher Appraisal is being developed. Induction training programmes were organised for SCERT faculty, DIET's faculty and principals of DIETs. Competitions for school teachers and teacher educators were organised for Innovations in School Education.

In the area of Educational Technology, video and audio programmes supplemented curriculum development and curriculum transaction in school education and teacher education. Twenty-seven audio programmes comprising 8 for 'Umang' service, 9 for teaching of Sanskrit and 10 for teaching Indian languages were produced. Seventy ETV programmes were developed mainly on Low-Cost Teaching Aids and Measurements with an Interface with the computers. Studies on (i) Innovative Practices in Educational Technology, (ii) Audio Conferencing in Teacher Education, (iii) Need Assessment of Educational Media Programmes, (iv) Effect of Computer -Assisted Learning (CAL) on Hearing Impaired Children, (v) Research Implications for Media Production, (vi) Impact of TVs, and RCCPs, and (vii) Effectiveness of Radio Broadcast on Pre-School, are in progress. Development of multimedia packages and Media Support to SOPT is continuing. Training/orientation programmes in Educational Technology, through teleconferencing, video editing, evaluation of educational technology, materials and programmes etc. are being organised. The NCERT has been using DD-I and AIR (ten stations) network for primary, secondary and teacher education programmes.

The Field Advisers, NCERT continued liaison functions pertaining to implementation of programmes and activities undertaken by various constituents of the NCERT, MHRD and the State Education Departments, etc. They provided assistance to the Regional Institutes of Education in the context of identification of educational needs of the States requiring NCERT's inputs. The Field Advisers provided assistance to the State Education Departments in the context of selection of teachers for national awards, development of curricula and instructional materials, training of personnel and policy formulation, etc. Assistance was also provided to the MHRD in the context of (i) monitoring of implementation of the Centrally Sponsored Schemes in the states, (ii) Presanction appraisal of NFE programmes, and (iii) assessment of functioning of the voluntary NFE agencies running NFE centres through the Joint Evaluation Teams.

The National Population Education Project (NPEP) was launched in April 1980. Since its inception the project activities have been directed to attain the objective of institutionalising population education in school and non-formal education system. As an educational response to population issues, Population Education aims at making learners aware of the inter-relationship between population and developmental issues, developing in them rational attitude and responsible behaviour and promoting a positive value orientation so that they may take informed decisions on various population issues. In view of the paradigm shift in population and development reflected in the Programme of Action adopted at the International Conference on Population and Development (ICPD), 1994, the Framework of Population Education was revised. In the light of the above framework of Population Education, a one-day workshop was organised at the Regional Institute of Education, Mysore to orient the facilitators for the Need

Assessment Study on Adolescence Education under National Population Education Project (NPEP). An eleven-day training programme was held at the NIE Campus (NCERT), New Delhi from 26 October to 5 November 1998 to orient 29 project personnel of States and UTs.

In accordance with the priority accorded to Vocationalisation of Education in the National Policy on Education, a Centrally Sponsored Scheme of Vocationalisation of Higher Secondary Education was introduced in February 1988. The main objectives of the scheme are to enhance individual employability, reduce the mismatch between demand and supply of skilled manpower and provide an alternative for those pursuing higher education without particular interest or purpose. A Centrally Sponsored Scheme of Prevocational Education at Lower Secondary Stage has also been introduced from the year 1993⁹⁴ primarily to impart training in simple marketable skills to the students of Classes IX and X, to develop vocational interests and to facilitate students in making a choice of Vocational courses at the higher secondary level.

The scheme is implemented through the State Governments /UT Administrations. So far, all States/UTs except Lakshadweep have joined the programme at the +2 level. Under the Prevocational Education Scheme, assistance has been provided to 11 States/ UTs for introduction of Pre-vocational courses in 652 schools. Assistance is also provided to non-governmental organisations for conducting innovative and non-formal programmes of Vocational Education. So far, 56 voluntary organisations have been assisted under the scheme.

The target laid down in the revised policy was to divert 10 per cent of higher secondary students to the

vocational stream by 1995 and 25 per cent by 2000 AD. As against this, 18,719 Vocational sections have been sanctioned in 6,486 schools all over the country thereby creating capacity for diversion of about 9.35 lakh students to the vocational stream which is 11 per cent of the enrolment at the +2 stage. Following are the major steps taken to strengthen the programme:

- A Joint Council for Vocational Education (JCVE) was set up in April 1990 for policy formulation and co-ordination at the national level. Three meetings of JCVE and its Standing Committees are held at regular intervals.
- The Central Institute of Vocational Education (CIVE), set up at Bhopal in July 1993, provides technical and academic support to the programme in the country. This has been recognised by the UNESCO and is part of the UNEVOC chain.
- Of the 150 courses introduced under the scheme, 60 Vocational courses have been notified under the Apprenticeship Act and additional 34 courses have also been approved for covering under the Act.
- Collaborative arrangements have been made with some Government departments like Ministry of Railways, Ministry of Health, etc. Efforts are also being made to evolve need-based courses in the area of Textiles, Food Processing and Leather. A collaborative pilot project with the National Institute of Fashion Technology (NIFT) for introducing Fashion Designing courses in three schools in Vishakapatnam, Ludhiana and Indore has been started.
- The States have been advised to strengthen the management structure at various levels, induct experts to infuse professionalism in the programme, introduce need-based courses and to strengthen linkages with the industry for on-the-job and apprenticeship training.

Consequent upon the meeting of the National Development Council (NDC), the matter of retention/transfer of the scheme to the States was discussed in the internal meeting of the Planning Commission and it was proposed to categorise the scheme into distinct groups as follows:

- those to be retained as per the Approach Paper;
- those to be transferred with resources to be pooled and distributed among the States as per the Gadgil formula;
- those to be transferred with earmarking of funds; and
- those to be transferred in a phased manner.

The scheme falls under the category of the schemes to be transferred without earmarking of funds. Recently, the Planning Commission has given the go-ahead for continuation of the scheme till a final decision is taken by the NDC. Meanwhile, the pilot project with NIFT is being continued. Another pilot project is being finalised to set up industry-driven vocational courses in schools affiliated to CBSE in collaboration with FICCI/Confederation of Indian Industry.

The Department has also set up a Working Group to suggest modifications in the implementation of the programme in future. The Working Group has prepared a document entitled 'Vocational Education and Programmes—Issues and Implication for Future Planning'. It has been proposed to organise widespread consultation of the people concerned before the recommendations of the Working Group are operationalised.

With the coming into force of the Persons with Disabilities Act, 1995 there is now a statutory responsibility on the Central, State and Local Governments to provide free education in an appropriate

environment to all disabled children up to the age of 18 years. The Department of Education has been implementing the scheme for Integrated Education of Disabled Children (IEDC) since 1974. The scheme aims at providing educational opportunities for moderately disabled children in the general school system so as to facilitate their retention and ultimate integration in this system. The scope of this scheme includes preschool training for disabled children and counselling of their parents. Under this scheme 100 per cent financial assistance is provided as per prescribed norms for facilities for disabled children like books and stationery, uniforms, transport and escort allowance for severely handicapped children, reader allowance for blind children and equipment which includes educational aids and assistive devices.

The IEDC scheme is presently being implemented in 26 States/UTs through nearly 15,000 schools and over 55,000 children are being benefited under this scheme. Efforts are being made to fund interventions for disabled children through various other schemes/ programmes being run by the Department of Education, viz. Adult Education, NFE and DPEP. Two polytechnics for disabled students have been set up at Mysore and Kanpur. The scheme also provides assistance to NGOs engaged in the field of integrated education.

The National Council for Teacher Education (NCTE) is engaged in developing curriculum for teacher training and orientation so that both general teachers as well as resource teachers are trained to handle disabled children. Multisite action and research programmes were launched in 23 DIETs and four Regional Institutes of Education. The NCERT has started the programme of training selected teachers (both general as well as resource) to make them Master Trainers who will in turn organise training programmes in their State under the guidance of

experts provided by the NCERT or the Regional Institutes of Education. Considering that training of teachers is the most important aspect for the success of the scheme of IEDC, the Department of Education has tied up with Aus-Aid under the India-Australia Training and Capacity Building Project (IATCBP) under which about Rs 1.50 crore will be made available by the Australian Government for:

- intensive training of 10 teacher educators in Australia to turn them into Master Trainers,
- further training by the Master Trainers along with three Australian experts in various places in the country,
- a Study Tour of 6- 10 officers of the Government of India and State Governments as well as educational institutions to learn first-hand about the educational policy and its implementation by the Australian Government, and
- planning arrangements between institutions in India and those in Australia with a personnel and technology exchange programme to keep the system abreast of the latest advances in this field.

The NPE lays down that Yoga will receive special attention as a system which promotes the integrated development of the body and mind. The NPE also envisages the introduction of Yoga in all schools.

Based on an evaluation of an experimental programme of introduction of Yoga in KVs as also consultation with Yoga experts, a Centrally Sponsored Scheme for promotion of Yoga in schools was launched in 1989-90. This scheme was being implemented through the Education/ concerned Departments in the States/UTs as well as through Yoga Institutions of repute. Under this scheme, financial assistance was provided for training of teachers in Yoga and for building up of infrastructure

necessary for the purpose. In addition institutions of all India character were given assistance for maintenance as well as developmental expenditure for promotion of basic research and teacher training programmes in various aspects of Yoga other than therapeutical aspects. The Ministry of Finance recommended that efforts should be made to include Yoga as a subject in the school curriculum. Accordingly efforts are being made to include Yoga as a subject in school curriculum. The Department of Education is also engaged in formulating a fresh scheme for introduction of Yoga in schools which will have a widest scope, enhanced grants for teacher training and reduced assistance for infrastructure/ library facilities.

The Central Board of Secondary Education (CBSE), Delhi has been making constant endeavours to provide quality education and development of holistic individual. During the period under report, the following activities were undertaken by the Board.

In all 2,36,795 candidates were registered for Senior School Certificate Examinations and 4,09,695 candidates were registered for Secondary School Examinations held in March April 1998. The CBSE regularly reviews its system and operational areas to bring out improvement, fairness and objectivity through the following procedure:

- Timely declaration of results
- Orientation of Head Examiners
- Marking Schemes
- Updating the outdated system
- E-mail service provided for the first time
- Marksheets sent along with results
- Sample Papers

1,41,597 candidates registered themselves for the All India Pre-Medical/Pre-Dental Examination this year.

The first examination for Jawahar Navodaya Vidyalaya selection test for admission to Class VI was conducted by the CBSE in two phases in the month of February and April. More than 5 lakh candidates registered and appeared at the examination which was held for summer and winter-bound schools.

The CBSE appoints the territorial study teams to conduct regular academic visits to the schools. This year 276 new schools have been added and the total number of affiliated schools stands at 5,119 located in different parts of India and in other countries like Bangladesh, Bahrain, Saudi Arabia, Kuwait, Russia, etc.

The thrust of the curriculum design is upon providing knowledge, promoting psychomotor skills, developing logical thinking and scientific aptitude and strengthen value-based approach to life.

The Board has provided 37 different courses which can be offered depending upon the requirements and suitability of the students. The courses are defined in two categories:

- Job-oriented Courses
- Job-linked Vocational Courses

The CBSE is the first Board in the country to introduce Generic Vocational Course at the +2 level. This competency-based curriculum provides skills that cut across various vocations and prepare a learner for occupational role in general. The contents of this course include House Keeping to Automation and Robotics, Resource Management, Goal-setting, Work Culture, etc.

The publication printed by CBSE on Consumer Awareness educates teachers/ students about the theoretical aspects of consumer education and protection. The aim of the booklet is to create awareness in the minds of the students.

To familiarise the students with the growing concerns of environmental degradation, ecological imbalances and the global concerns on environmental issues, the Board has launched environmental education in schools.

A delegation from Japan comprising primary, middle and secondary school teachers visited the CBSE to discuss and present their views on the education system in both the countries. A team of senior level officers from South Africa led by the Superintendent General, Education Department, South Africa visited the CBSE. Detailed discussions were held about the pre- and post-examination procedures and actual conduct of examinations.

The Government of India approved the scheme of Kendriya Vidyalayas (KVs) in 1962 on the recommendations of the Second Central Pay Commission, with the idea of encouraging the growth of secondary schools with a common syllabus and medium of instruction for providing uninterrupted education to the children of Central Government employees who are liable to frequent transfers. Initially, 20 regimental schools in different States were taken over as Central Schools. In 1965, an autonomous body, called the Kendriya Vidyalaya Sangathan (KVS), was set up to run these Vidyalayas. Over the years, the number of Kendriya Vidyalayas increased to 875 as on 31 December 1998. As on 31 March 1998 the number of teaching staff is 36,030 while the number of non-teaching staff is 46,069.

The salient features of Kendriya Vidyalayas are as follows:

- Kendriya Vidyalayas are fulfilling their commitment to cater to the educational needs of the wards of transferable Central Government employees to a large extent.

- Preference in admission is given to children whose parents have the largest number of transfers during the preceding seven years.
- All KVs are co-educational and composite.
- Common Textbooks with common curriculum and bilingual medium of instruction, i.e. English and Hindi are followed.
- All KVs are affiliated to the CBSE.
- Teaching of Sanskrit from Class V to IX is compulsory. However, the student can offer Sanskrit as an additional optional subject at Class X also.
- The quality of teaching is kept high by maintaining a proper teacher-pupil ratio. No tuition fee is charged from students up to Class VIII. The wards of staff of KVS, SC/ ST students, children of officers and men of the Armed Forces killed or disabled during hostilities in the wars of 1962, 1965 and 1971 against China and Pakistan and girl students are exempted from paying tuition fee up to Class XII.

The Minister for Human Resource Development is ex-officio Chairman of the Sangathan. The policies and guidelines issued by the Sangathan and its Board of Governors are executed by the Commissioner who is the executive head of the Sangathan. In order to execute all tasks and decisions about administrative and academic matters, the Commissioner is assisted by two Joint Commissioners and other officers and supporting staff at the KVS (Hq) and its 19 Regional Offices. The Regional Offices are headed by Assistant Commissioners. The main functions of the Regional Offices are to monitor and supervise the working of the Vidyalayas in the region, to carry out administrative work relating to service matters of both academic and general staff and to allot funds to Vidyalayas. At the Vidyalaya level, each Kendriya Vidyalaya is headed by a Principal/Vice-Principal

assisted by a small group of administrative and other supporting staff, besides teaching personnel.

Kendriya Vidyalayas are opened in the Civil Sector on the recommendations of various Ministries/ Departments of Central/State Government, or the Central Government Employees Welfare Association. Similarly, Vidyalayas are opened on the recommendations of the Ministry of Defence in the Defence Sector. The Kendriya Vidyalayas are also opened in Project Sector in the campuses of Public Sector Undertakings (PSUs) and institutions of higher learning if the recurring and non-recurring expenditure is fully met by the sponsoring authorities. In order to meet the increasing demands from the target groups (Civil and Defence Sectors), the Government approved in May 1993 opening of up to 20 Vidyalayas every year during the period 1993-94 to 1997-98 and as many as may be practicable, in view of suitable proposals, in the Project Sector.

The main object of the Kendriya Vidyalayas is to provide uninterrupted educational facilities to the wards of Central Government employees who are transferred from one region to another and from one linguistic area to another. The main criterion for admission in Kendriya Vidyalayas is, therefore, the transferability of the parent, i.e. during the last seven years, immediately preceding the year of admission. Thereafter, the children of transferable employees of PSUs fully financed by the Government, followed by nontransferable employees are admitted. After meeting demands of the above categories, if vacancies are still available, admissions are also given to the floating population. The Board of Governors has also approved certain exceptions for admission in Kendriya Vidyalayas over and above the class strength:

- The children and dependent grand-children of Members of Parliament, children of KVS / NSG / SPG employees.

- Fifty seats for employees of Ministry of External Affairs and RAW.
- One hundred seats for the employees of the Department of Education.
- Children of Central Government employees who die in harness.

Fifteen per cent and 7.5 per cent seats of fresh admissions are reserved for SC/ST candidates. After meeting the needs of the registered SC/ST candidates, the unfilled seats of one category can be transferred to another category to a maximum of 22.5 per cent of fresh admissions. There were about 7.52 lakh students studying in Kendriya Vidyalayas as on 1 April 1998.

Kendriya Vidyalayas provide Science, Commerce and Humanities streams mainly. Physical Education, Political Science, Fine Arts and Music have also been introduced in addition to Computer Science as elective subjects at the +2 stage. Students belonging to SC/ST and those who have participated in Games and Sports Meets, Scouting and Guiding Camps/NCC/Adventure activities are given concession in admission at the +2 stage in Science and Commerce streams.

The academic performance of KVs at Class X and XII examinations conducted by the CBSE for 1998 is 76.80 per cent and 79.90 per cent, respectively.

A well-chosen teaching staff and their periodical orientation in general and methodical areas by developing and building their competencies enable them to nurture the talents of the students fully. These regular training programmes, after a periodicity of six years, will improve with the establishment of five Zonal Institutes of Education and Training. The Government has already sanctioned Rs 3 crore for setting up of these institutes at the following places: Bolangir (Orissa), Gwalior (Madhya

Pradesh), Karad (Maharashtra), Mysore (Karnataka), and Sirsa (Haryana). These institutes are yet to be functional for want of sanction of posts.

The following programmes and activities have been undertaken by KVS:

- A Project on Computer Literacy and Studies in Schools (CLASS) has been ongoing in 291 KVs.
- The revised CLASS Project has been introduced in 161 Kendriya Vidyalayas under UNIX Environment.
- The other activities like Youth Parliament, Associated Schools Project on National Integration and International Understanding, KVs Science Exhibition, Scouting and Guiding, Adventure Activities, NCC, NSS and Games and Sports, etc. are a part of the Curriculum of every Kendriya Vidyalaya.
- The project on Value Education as a pilot project, (ii) Strengthening of values through visual and performing arts, (iii) Students exchange programmes, (iv) Strengthening of primary education and (v) Celebration of 50th anniversary of Independence have been implemented.
- Fifty KVs have been identified as model Kendriya Vidyalayas which will be equipped with better infrastructure facilities for games and sports, library, senior and junior science laboratories and computers. These will act as resource centres for neighbouring Kendriya Vidyalayas.

During the current year, 50 teachers were honoured with KVS Incentive Awards. Four KV teachers were awarded National Awards by the President of India in recognition of their meritorious services as teachers.

In order to provide high quality modern education including strong component of culture, inculcation of values, awareness of the environment, adventure

activities and physical education to the talented children predominantly from the rural areas, without regard to their socio-economic conditions, the Government of India launched the scheme to establish, on an average, one Navodaya Vidyalaya (NV) in each district of the country. Navodaya Vidyalayas are fully residential, co-educational institutions providing education up to senior secondary stage. Education in NVs including boarding and lodging, textbooks, uniforms, etc. is free for all students.

As on 31 December 1998, 397 schools have been sanctioned. It is expected to sanction 15 more new Navodaya Vidyalayas during 1998-99. The States of Tamil Nadu and West Bengal have not adopted the scheme as yet.

Admission to Navodaya Vidyalayas is made at the level of Class VI through a test conducted in the concerned district in which all children who have passed Class V from any of the recognised schools in the district are eligible to appear. The tests are designed and conducted by the NCERT. From the year 1998, JNVST is being conducted by CBSE.

The Government has approved setting up of five Zonal Training Institutes for providing in-service training to the teachers of JNVs at various locations in the country.

The existing Computer Literacy Programme (CLP) in 103 Navodaya Vidyalayas is being continued. It is proposed to extend this programme to more JNVs in a phased manner. The expansion of CLP to 100 more JNVs is expected to be finalised during this year. As per migration policy of Navodaya Vidyalaya Samiti, 30 per cent migration of the students at Class IX level from 336 Vidyalayas has taken place during 1997-98. 4,683 students were proposed for migration against which 4,314 students have actually been migrated.

A total of 235 Navodaya Vidyalayas were upgraded to Senior Secondary stage during the period under report. Science, Commerce, Humanities and Vocational streams were introduced in these Vidyalayas. Various Vocational streams allocated to Vidyalayas, viz. Electrical Technology, Vocational Commerce and Hotel Management are functional in certain JNVs.

The NVS is actively taking part in sports/games. Judo and athletics teams have won third place and cash rewards in School Games Federation of India Competitions. It organised School Games Federation of India Competitions inviting teams from various States at Amravati, Maharashtra for the first time. The NVS National Games Group A and Group B national athletics were held during October -November 1998 at Delhi, Una and Vishakapatnam, respectively.

The Samiti organised a number of staff development programmes for the professional growth of teachers and Principals of JNVs. In this context it is also getting the help of agencies like CCRT, NCERT, NIEPA, SAI, etc. to update the knowledge of teachers and Principals. During the year 1998-99, the Samiti has organised 156 training programmes.

The Navodaya Vidyalayas are meant primarily for children from rural areas and admission of children from urban areas is restricted to a maximum of 25 per cent. The scheme also provides for reservation of SC/ST in proportion to their population in the concerned district subject to a maximum of 50 per cent provided that in any district such reservation will not be less than the national average.

Efforts are made to ensure that at least one-third of the students selected are girls. The percentage of SC/ST and girl students in JNVs during the academic session

1997-98 was 23 per cent, 14 per cent and 32 per cent, respectively.

The Navodaya Vidyalaya Samiti is recognised as a State for Scouting and Guiding activities by Bharat Scouts and Guides. Various activities are being conducted in the Vidyalayas to make children imbibe the philosophy of Scouting and Guiding movement.

- Children of NVs participated in 13th national Jamboree of Bharat Scouts and Guides held at Khurda (Orissa) from 4 to 9 January 1998.
- NVS organised its first National Jamboree in Scouts and Guides as well as Rajya Puruskar Award function at Bangalore during April 1998; 209 Scouts and Guides, 27 Scouters and Guiders of JNVs from all over India took part in the Jamboree.
- NVs children of Regional Office, Jaipur, Pune, Lucknow and Hyderabad attended President Scout and Guide testing camps. Important days like Sadbhawana Diwas, Anti Leprosy Day, Scout and Guide Foundation Day, etc. were celebrated by the Scout and Guide Unit in the Vidyalayas.
- NCC is being introduced in JNVs in a phased manner. The Samiti has a total of 7,950 cadet strength (6350 boys and 1600 girls). JNV cadets attended several NCC camps and excelled themselves. NCC cadets took part in Republic Day parade in several districts.

Four science exhibits from Navodaya Vidyalayas Aurangabad, Muzaffarnagar, Sitapur and Kurnool were selected for Jawaharlal Nehru National Science Exhibition 1998, held at Amritsar.

National awards presentation function for the Navodaya toppers in the CBSE Public Examinations of March 1998 as well as to the outstanding teachers of the

Navodaya Vidyalayas for their meritorious services was held on 3 December 1998 at New Delhi. Dr Murlī Manohar Joshi, Minister for Human Resource Development and Chairman, NVS gave away the awards to the children and the teachers. While five children who are toppers in the Classes X and XII examinations of 1998 from NVs were given Director's Gold Medal and cash awards, 33 teachers from different JNVs were also honoured by presenting shawl, citation and cash awards.

Established as an autonomous institution under the Ministry of Human Resource Development, Government of India in 1989, the National Open School (NOS) mainly caters to the educational needs of the school dropouts and socially and economically backward learners. The focus of the NOS covers right from the elementary education to course at the pre-degree level, both academic and vocational. The NOS has shown a steady growth in student enrolment, number of courses and study centres.

The number of study centres is increasing year after year and this year the number has touched 871. Special Accredited Institutes for Education of the Disadvantaged (SAIED) are being established by the NOS as special centres all over the country.

As a first step towards globalisation of its educational services, the NOS launched its study centres in the Middle East, i.e. Dubai and Abu Dhabi. The aim is to extend educational facilities through the open learning system to non-resident Indians and other nationals settled there. During the year under report, 116 Boards and Universities recognised the examination conducted by the NOS.

Audio and Video programmes are one of the most important components of the multi-channel package offered by the NOS. These programmes developed by the

Media Unit supplements and complements the other channels of learning such as self-learning print materials and personal contact programmes. The NOS has so far produced 35 audio programmes in Hindi and English languages and 56 video programmes each in Hindi and English language on different subjects of the secondary course.

Two more regional centres at Chandigarh and Cochin have been established during 1998-99. So far eight Regional Centres have been established to effectively implement and monitor the functioning of NOS programmes.

Keeping in view its aims and objectives, the NOS is providing professional guidance for the establishment of State Open Schools. Open Schools have already been established in Andhra Pradesh, Rajasthan, Haryana, Madhya Pradesh, Karnataka, West Bengal and Punjab. Similarly, the NOS has helped Himachal Pradesh and Assam in setting up State-Centre for Open Schooling.

The Central Tibetan Schools Administration (CTSA) was set up as an autonomous organisation by the Government of India. The main objectives of the CTSA are to run, manage and assist institutions for the education of Tibetan children in India. To keep the Tibetan community abreast with all aspects of modern education and development while retaining essentials of their traditional system and culture, schools have been opened all over the country, where there is concentration of Tibetans, mostly in hilly areas.

The Central Schools for Tibetans are affiliated to CBSE, Delhi and follow 10+2 system of education. They prepare students for the All India Secondary School and All India Senior School Certificate Examinations. The medium of instruction in the primary department is Tibetan whereas the medium of instruction from Class VI

onwards is English. Up to Class VIII, the syllabi prepared by the NCERT are followed except in the case of Tibetan language which is designed by Central Tibetan Administration, Dharamsala. In Classes IX and X, the syllabi prescribed by the CBSE are followed.

At the +2 stage the Administration imparts education in Humanities, Science, Commerce and Vocational streams. Under Commerce-based Vocational streams, three courses have been in operation: Stenography (English), Accountancy and Auditing and Purchasing and Store Keeping.

The Administration runs 87 schools-eight senior secondary schools (six Residential and two Day Schools): five Secondary Schools: nine Middle Schools: eight Primary Schools and 45 Pre-Primary Schools and 12 Grant-in-Aid Schools. 11,0 17 students are receiving education in these schools.

To ensure uniformity of academic standard, Common Annual Examination at the end of Class V, VIII, IX and XI are conducted by the Administration. Besides, these Physical and Health Education and SUPW form an integral part of the syllabus. Music and dance training is compulsory for all students up to Class X. Due stress is laid on National Core Curriculum, Value Education and Environmental Studies.

To encourage students to pursue further education, 15 Tibetan students are given scholarships for pursuing degree level courses and five students for diploma level courses. The Government of India has reserved some seats for Tibetan students in professional courses like Medical, Engineering, Teacher Education, pharmacy, etc. in diploma/degree level courses.

The CTSA has introduced some innovative schemes for achieving academic excellence. Remedial teaching for

students of Classes X and XII is one such scheme to improve performance of students in the CBSE examination.

For professional development of teachers a number of in-service training courses are organised in collaboration with the NCERT and country, where there is concentration of CIIL, Mysore as well as with the Department of Education, MHRD and CTA, Dharamsala

Moreover, the CTSA has introduced a scheme of incentives to Indian teachers for acquiring proficiency in Tibetan language to promote closer interaction with the students.

The scheme of National Awards for Teachers was started in the year 1958-59 with the object to give public recognition to the meritorious teachers working in Primary, Middle and Higher Secondary schools. In 1967-68 the scope of the scheme was enlarged to cover the teachers of Sanskrit Pathshalas, Tolls, etc. run on traditional lines. In 1976 the scheme was further enlarged to cover Arabic/Persian teachers of Madrasas run on traditional lines. From 1993, the scheme has further been enlarged to cover teachers of Sainik Schools, Navodaya Vidyalayas and schools run by the Atomic Energy Education Society. Each award carries a certificate of merit, cash award of Rs 10,000 and a silver medal. The number of awards have been increased from 296 to 302 from the year 1993.

Two hundred and sixty-one teachers were selected for the National Award for 1997. These awards were presented by the President of India on 5 September 1998 at a function organised at Vigyan Bhawan, New Delhi.

The National Foundation for Teachers' Welfare (NFTW) was set up in 1962 under the Charitable Endowments Act, 1890. The main objective of the

Foundation is to promote the welfare of the school teachers, and to alleviate distress among them and their dependents in indigent circumstances through financial assistance. The affairs of the organisation are managed through a General Committee under the Chairmanship of the Minister for Human Resource Development with Ministers in charge of School Education in the States/UTs as its Members. State level committees of the Foundation exist under the Chairmanship of the Education Ministers of States and Lt. Governors of Union Territories, respectively.

Annual contributions from Member States/ UTs and 10 per cent of the collections of donations on Teachers' Day constitute the corpus of the Foundation. The States/UTs retain 90 per cent of the proceeds of donations. Funds of the Foundation at the Central level are invested in five-year time deposits through the Treasurer of Charitable Endowments for India (TCE).

Financial assistance is extended through the following schemes:

- Construction of Shikshak Sadans
- Subsidy for academic activities of teachers
- Paid holiday to the awardee teachers
- Support for professional education of children of school teachers
- Gratuitous relief in cases of serious accidents
- Grant of financial assistance to teachers for serious ailments.

The Foundation annually selects three teachers for the Prof. D.C. Sharma Memorial Award, instituted in 1970 in memory of the eminent educationist. Selections for 1994 and 1995 were made during the year under report.

To improve the quality of science education and

promote scientific temper, as envisaged in the National Policy on Education 1986, a Centrally Sponsored Scheme 'Improvement of Science Education in Schools' has been operational since 1987-88. The scheme uses the resource and agency of the State Government and non-governmental organisations for achievement of these objectives. Accordingly, 100 per cent assistance is provided to the States/Union Territories for provision of science kits to upper primary schools, upgradation of science laboratories and library facilities in Secondary/Senior Secondary schools and training of science and mathematics teachers. The scheme also provides for assistance to voluntary organisations for undertaking innovative projects in the field of science education.

The National Policy on Education (NPE), 1986 provides that the protection of environment is a value which, along with certain other values, must form an integral part of curricula at all stages of education. Operationalisation of this novel objective requires that the mind and intellect of the students must be sensitised about the hazards inherent in over-exploiting the bounties of Nature, and to inculcate awareness and respect among them for the basic concepts relating to conservation of environment.

To this end, a Centrally Sponsored Scheme 'Environmental Orientation to School Education' was initiated in 1988-89. The scheme envisages assistance to State Governments/UT Administrations and voluntary agencies. The voluntary agencies are assisted for the conduct of experimental and innovative programmes aimed at promoting integration of educational programmes in schools with local environmental conditions. The scheme envisages grants to States/UTs for various activities including review and development of curricula of various disciplines at primary, upper primary, secondary and senior secondary levels with a

view to infusing environmental concepts therein; review and development of textbooks on 'Environmental Studies' at primary and upper primary levels: review of strategy for imparting environmental education at upper primary level; development of teaching-learning material: organisation of suitable innovative work experience activities. The scheme has been restricted to voluntary organisations only from 1996-97.

With a view to identifying and nurturing talent in Mathematics and Physics at school level, the International Mathematical Olympiad (IMO) and International Physics Olympiad (IPO) are held every year. India has been participating in these Olympiads since 1989 and 1998, respectively. Each participating country is required to send a team comprising not more than six secondary student contestants to IMO and five secondary student contestants to IPO apart from a leader and a deputy team leader.

As per the existing financial pattern, the host country pays for the food and accommodation and transportation of the participating teams during their stay in the host country, while the International travel cost is borne by the participating countries. Indian teams in the last Olympiads were jointly sponsored by the Department of Education, MHRD and the National Board for Higher Mathematics (NBHM) / Homi Bhabha Centre for Science Education (HBCSE), respectively. The cost of international travel was paid by the Department of Education while all other expenses on selection of students, internal travel, incidental expenses, etc. were borne by the NBHM/HBCSE.

IMO-98 was held at Taipai, Taiwan in July 1998. Indian delegation participated in the event and won three gold and three silver medals. At IPO-98 held at Reyjavik (Iceland) during July 1998, Indian team won one silver

and one bronze medals, while three contestants received honourable mentions.

Educational technology is a Centrally Sponsored Scheme combining certain elements of a Central Plan Scheme. This scheme seeks to provide the entire cost of radio-cum-cassette players in Primary Schools and 75 per cent cost of colour TVs in Upper Primary Schools to provide access to quality education. To enable production of suitable programmes for these schools, six autonomous State Institutes of Educational Technology (SIETs) in Uttar Pradesh, Bihar, Orissa, Maharashtra, Gujarat and Andhra Pradesh, have also been funded under the scheme. The scheme also extends financial support to the Central Institute of Educational Technology (CIET) for producing programmes for the schools sector for telecast/broadcasting through Doordarshan and Akashvani. At present all the programmes for the schools sector for broadcasting through Akashvani and telecast through Doordarshan are produced by the CIET and SIETs. So far 3,87,438 radio-cum-cassette players and 74,001 colour TVs have been sanctioned to States and UTs for installation in Primary/ Upper Primary Schools. During 1997-98, the CIET and SIET's have together produced 708 (169 audio and 539 video) programmes.

The Central Institute of Indian Languages (CIIL), Mysore has been funded for production of cassettes for learning certain Indian languages at the school level.

The Government of India and most of the States/ UTs offer educational concessions by way of reimbursement of tuition fees, boarding-lodging expenses, expenditure incurred on uniforms, textbooks, transport charges, etc. to the school students who are the wards of Armed Forces personnel killed or permanently disabled during Indo-China hostilities of 1962 and Indo-Pak hostilities of 1965 and 1971. During 1988 these

concessions were extended to the children of IPKF/CRPF personnel who were killed/disabled during action in Sri Lanka and to the children of Armed Forces personnel killed/disabled in action in Operation Meghdoot in Siachen area.

Realising that children, who are the work-force of tomorrow, need to be exposed to utility and applications of computers, the Department of Electronics, in collaboration with the MHRD, initiated a pilot project Computer Literacy and Studies in Schools (CLASS) from the year 1984-85. The broad objectives of this pilot project included domestication of computers, and to provide hands-on experience. The CLASS Project was modified and converted into a Centrally Sponsored Scheme from the year 1993-94. Under the revised scheme to be eligible for assistance the following conditions are to be satisfied by the States/UTs.

- The coverage of the scheme for new schools will be restricted to senior secondary schools.
- In selected schools, instructions in Computer Literacy will be compulsory for all students of Classes XI and XII.

The National Steering Committee under the Chairmanship of Education Secretary is responsible for monitoring and supervision of the project. At State/UT levels cells set up for the purpose will discharge the dual responsibility of monitoring and actual implementing agencies 2,371 schools have been covered under the revised CLASS scheme during the Eighth Five Year Plan.

One of the main factors responsible for slow pace of growth of enrolment of adolescent girls of rural, tribal and other remote areas is the traditional, societal inhibitions against their movement outside the family precincts. Since the Secondary/ Higher Secondary Schools in such places are sparsely located, the girls

remain particularly disadvantaged. In order to implement the recommendations in POA-1992 for formulating a special enabling plan to ensure increase in enrolment of girls in secondary education and the NPE directive for encouraging NGO participation in education, it was decided to launch the above-mentioned scheme during the Eighth Plan.

Under the Scheme for Strengthening of Boarding and Hostel Facilities for Girl Students of Secondary and Higher Secondary Schools, financial assistance is being given to the eligible voluntary organisations to improve the enrolment of adolescent girls belonging to rural areas and weaker sections. Preference in providing assistance is given to educationally backward districts, particularly those predominantly inhabited by SCs/STs and educationally backward minorities in the secondary and higher secondary schools.

The following types of grant are given under the scheme:

1. Rs 5000 per annum per girl boarder for food and salary of cook and warden if the hostel/boarding house accommodate atleast 25 girl boarders who are students of Classes IX-XII of recognised schools would get assistance under this scheme subject to an overall number of 50 boarders.

2. One time grant of Rs 1500 per girl boarders for purchase of furniture (including beds) and utensils and provision of basic recreational aids, particularly material for sports and games, reading room equipments and books.

Education about India's common cultural heritage has been identified in the National Policy on Education as one of the core areas under the National System of Education. While spelling out the cultural perspective in

education, the policy has stressed on the need to bridge the schism between the formal system of education and India's rich and varied cultural traditions.

In 1990, a decision was taken to review the earlier scheme of strengthening Culture/Art/ Values in Education to make it more purposeful. A reformulated scheme of Assistance for Strengthening Culture and Values in Education was introduced in the last quarter of 1992-93. The revised scheme has the following two broad components:

- Strengthening Cultural and Value Education inputs in the school and non formal education system.
- Strengthening the in-service training of art, craft, music and dance teachers.

The scheme has provided greater awareness among voluntary organisations and also the greater significance of value education.

Under cultural exchange programme financial assistance is provided to bear the expenses for foreign travel/ stay of non-official delegation going abroad and expenses for travel/ stay in India in respect of the members of foreign delegation coming to India, in pursuance of India's Cultural Exchange Programme with foreign countries.

Basically planning consists of deciding what to accomplish, how to accomplish it, and how to tell what has been accomplished. We hope that this chapter will give you a general idea of how to carry out these steps. We pay particular attention to selecting objectives and learning activities by which to achieve those objectives. We also consider team planning, teacher-student cooperative planning. And the resources one can use in planning. As you study, pay particular attention to the role of the objectives and the ways in which different

kinds of activities can aid students in attaining those objectives. Also note the need for adjusting your choices of learning activities to the learning situation.

Planning is done at many levels. Commissions, committees, and state departments of education set up the overall educational goals and outline curriculum requirements. At the local district level, local school authorities and committees of teachers and supervisors set up goals and map out the programs of studies for the local school curricula. Recently, in an effort to make schooling more thorough and efficient, some state and local authorities have taken a much more active part in setting up specific objectives and standards of achievement. The idea in back of their effort is that (1) schooling should develop certain competencies in the students; (2) the state and local school authorities should take steps to determine what these competencies should be. And (3) the students should actually achieve these competencies. At the most important level, the persons responsible for planning the courses, units, and lessons are the teachers. They determine the actual objectives, content, and procedures in the lessons, units, and courses. In some cases, in order to facilitate cooperation and correlation, teachers plan together as teams.

To what extent students participate in the planning of their own learning activities varies greatly from school to school and class to class, the range being from almost no participation in conservative traditional classrooms to (rarely) students' making almost all the decisions in progressive alternative schools and advanced college seminars.

In almost every course, however, students do some planning, if only to select and carry out their own projects, reports, outside readings and similar activities even when the teachers do the major planning activities.

Nevertheless, even when the course plane is largely prescribed by school officials, or when the planning is shared by colleagues, or when students cooperate in establishing the goals and activities, the responsibility for determining the objectives and procedures of the courses, units and lessons falls squarely on the teacher.

All good teachers plan. In the long run the success of any course depends upon the excellence of the plan, and the skill with which the plan is carried out. Almost literally, then, in the classroom situation good planning is half the battle. Sometimes experienced teachers disparage planning. Some of them claim that they never make lesson plans or course plans. Be not deceived. A lesson plan is only a decision concerning what one intends to do and how one intends to do it. When the world-famous university professor decides that tomorrow he will tell the students what really caused the French Revolution, and, to accomplish this purpose, he will trot out his old reliable lecture for the edification of the scholars, he is planning. As a rule, young, inexperienced find that they need to plan much more carefully.

Basically, as we have noted, planning consists of deciding (1) what one wishes to accomplish, and (2) how one wishes to accomplish it. It requires one to consider for each plan the questions:

— What is to be accomplished?

— How is it to be done?

— Who is to do what?

— When and in what order, shall things be done?

— Where shall it be done?

— Why do we want to accomplish this, and why do we plan to do it this way?

— How will we know well we have succeeded?

1. The teaching objectives.
2. Teaching-learning activities designed to attain these objectives,
3. a plan for evaluating the success of the teaching and the progress of the students toward objectives.

The first step in lesson, course, or unit planning is to set up objectives. In other words, you must decide what you hope the students will learn as a result of your teaching. These learning products may include

1. What the learner will know (concepts):
2. What the learner will be able to do (skills);
3. What the learner will feel (attitudes, appreciations, or ideals).

They should be selected on the basis of such considerations as the following:

- The nature and structure of the subject.
- The needs of the students.
- The readiness of the students.
- The interests, abilities, attitudes, and other characteristics of the students.
- The larger educational goals and general objectives.
- Your own philosophy, inclinations, and capabilities.
- Community expectations.
- The feasibility of the objectives, for example, the facilities, equipment, supplies, and time available.
- Other elements of the curriculum.

Do this before you proceed further in your planning.

Remember, much teaching fails because teachers do not

Writing the objectives

Ordinarily in planning for instruction it is best to write out your objectives. Doing so

- ensures that you have acquired the learning yourself (if you can describe the learning you probably never learned it thoroughly yourself);
- gives you a definite goal for which to aim;
- gives you a standard by which to evaluate student achievement;
- helps to eliminate fuzzy thinking about the learning and thus helps to avoid soft pedagogy-i.e., pedagogy that results in no learning or little learning.

Descriptive or behavioural objectives

You may choose to write out your objectives either as descriptive or behavioral objectives. In writing out a descriptive objective, all one does is to describe the learning product desired as in the following examples. Behavioural objectives are somewhat more complicated. Here the essential element is a description of what the student will be able to do as a result of the learning. They may be written in terms of covert, i.e., not observable behavior, as in this example. "Upon completion of the unit the student will understand the forces that caused the United States and the British Empire, now called the Commonwealth, to develop a real friendship." In this objective the key word is "understand."

An action that is not readily observable. Or objectives may be stated as overt behavior, as in this example. "Upon completion of the unit the student will be able to explain in his own words the significance of at least three of the principal reasons why the United States and the British Empire, now called the commonwealth, developed a real friendship." In this objective the key action is "to explain" which is readily observable.

As a rule, "covert" behavioral objectives should be used only for broad, general objectives or course goals. In such objectives the verbs that delineate the behavior are words such as know, understand, appreciate, feel, enjoy, and comprehend, as in the following examples. "At the completion of the unit the students will know the basic properties of simple geometric figures." At the completion of the unit the students will appreciate the beauties of Shakespearian poetry." Often, however, general objectives of both the cognitive and affective domains are more useful when expressed as overt behavior, as the following example from the affective domain illustrates. "At the completion of the course students will read Shakespearian poetry for recreation." General objectives in the psychomotor domain should always be written in terms of overt behavior.

Specific behavioural objectives probably should be written only in terms of observable behavior in all of the domains. In other words, at the level of specific behavioral objectives the objectives should be what Tyler calls performance objectives, i.e., objectives that describe the performance of the students. For example, 'At the end of the lesson each student will be able to describe the procedure for constructing a map profile step by step without error.' In this example the overt behavior is "describing." It can be easily observed and evaluated by the teacher.

Specific behavioural objectives of this type are valuable because they give one specific targets at which to aim one's teaching, and specific behavior in use as criteria for evaluating teaching and learning. In writing these objectives, one should always use action verbs such as identify, describe, list, explain, display, define, demonstrate, execute, state, tell, construct, organize, select, write, present, interpret, locate, compare, pronounce, perform, draw and so forth. Examples of

specific behavioral objectives follow. "At the completion of the lesson the students will be able to draw a trapezoid." "At the completion of the lesson the students will be able to identify a non sequitur." Simple or criterion-referenced behavioural objectives tell only what the learner will do at the end of the instruction, as in the preceding examples.

Criterion-referenced behavioral objectives. For example, the criterion-referenced or performance objective: "At the end of the lesson each student will be able to describe the procedure for constructing a map profile step by step without error," sets errorless performance as the criterion for achievement of the objective.

Thus, you see, simple behavioral objectives consist of three elements

- a. an introductory phase;
- b. who,
- c. does what,

While the criterion-referenced behavioral objectives, when written out completely, contain four or five elements.

- a. The introductory phase
- b. Who (i.e., the learner);
- c. Does what (i.e., the behavior required);
- d. How well (i.e., the level of performance required or, in other words, the "criterion of acceptable performance"), and when desirable
- e. Under what conditions (i.e., the givens and/or restrictions or limitations that govern an acceptable performance).

Following are examples of both simple and criterion-referenced objectives and analyses of their elements. In

The action verb is purchase.

Following are examples of simple behavioral objectives in the affective and psychomotor domains. Point out the elements in each:

As a result of the instruction in scientific thinking, the students demonstrate the scientific attitude by searching out and examining evidence before making decisions.

At the completion of the unit, the student will be able to play a closed paradiddle on the drums.

In the following sample criterion referenced behavioral objective in the cognitive domain". Given examples of the type x^5/x^3 , students will be able to solve the examples by subtracting the exponents in at least nine out of ten cases," the elements are

- a. All the completion of instruction [understood]
- b. the students [who]
- c. will be able to solve the examples by subtracting exponents [does what]
- d. in at least nine of ten cases [how well]
- e. given examples of the type x^5/x^3 (under what conditions).

The action verb in this objective is "solve".

In another examples of a criterion-referenced objective in the cognitive domain. "The student will be able to pick out proper and common nouns from a page of his textbook with 90 per cent accuracy," the elements are

- a. At the completion of instruction (understood)
- b. the student (who)
- c. will be able to pick out proper and common nouns (does what)

- d. with 90 per cent accuracy (how well)
 - e. from a page of his textbook (under what conditions).
- The action verb here is pick.

In the following example of a criterion-referenced objective from the psychomotor domain "The student will be able to run the 100-yard dash in 12 seconds," the elements are

- a. At the completion of training [understood]
- b. the student (who)
- c. will run the 100-yard dash (does what)
- d. in twelve seconds (how well)
- e. (under what conditions, not stated).

Here the action verb is run

Note that criterion-referenced objectives must always be "over". They are best suited for use as specific objectives in the cognitive and psychomotor domains. Because of the difficulties in judging affective behavior, we do not recommended their use for the affective domain in ordinary classroom instruction.

Because criterion-referenced specific behavioral objectives are more precise than simple specific behavioral objectives, they usually provide (1) better targets for the instructor, and (2) more definite standards by which to judge the success of the teaching and learning than other types of objectives do.

Tips for writing cognitive behavioural objectives. Although behavioral objectives are not difficult to prepare, there are some cautions you should bear in mind to make your objectives effective. Express behavioural objectives as statements that begin "At the completion of the lesson (or until, or course) the student..." For purposes of brevity some or all of the beginning portion of the behavioral objectives may be

omitted so that the behavioral objectives as written begins with a verb, e.g., "Types at the rate of forty words per minute without making more than one error per minute." When it is written this way, it is understood that the beginning words "At the completion of instruction the student" have been omitted and that the objective in full would read "At the completion of the instruction the student will type at the rate of forty words per minute without making more than one error per minute."

Be sure each behavioural objective describes potential student behavior. Sometimes the behavioral objectives teachers write are not behavioral objectives at all. Behavioral objectives must describe the student behavior expected. The objective "to discuss the picaresque novel" is not a behavioral objective because it does not describe the students' terminal behavior. Rather it describes the learning procedure.

Similarly the phrase "the picaresque novel" is not a behavioral objective because it merely names a topic and describes no behavior at all. "In this class I will demonstrate the cause-and-effect principle" is also not a behavioral objective because it describes teacher behavior rather than student behavior. We repeat, if it does not describe the students' terminal behavior, it is not a behavioral objectives at all. The following is an example of a behavioral objective because it tells us what the student can do i.e., identify the best painting. "From a group of three paintings the student will be able to identify the one painting that most closely adheres to the principles of quality set forth in the course." Be sure that each behavioral objective includes one and only one learning product.

The objective "At the end of the unit the students will understand the principles underlying the problem-

solving methods and apply them rigorously in their daily work" is not really satisfactory because it calls for two different learning products requiring different types of evidence. A student may understand the principles but because of an attitude or lack of skill-fullness not use them. When you write criterion-referenced objectives, be sure that the criteria you list are really indices of the learning you seek. Objectives such as the following beg the question. They do not give us any honest criteria by which to judge the student's achievement: "When you finish this packet you will be able to answer with reasonable accuracy questions on ions, isotopes and static electricity."

To write objectives that measure the higher mental levels is difficult, particularly when we limit ourselves to overt behavior. Consequently the behavioral objectives listed for many courses, units, and lessons largely concern memory work, simple skills, isolated facts and other lowlevel learning. This is unfortunate. Even though to write objectives sampling the higher mental processes may be become frustrating, one should not give up trying. They are the important objectives that make education worthwhile.

It is the student's objectives that cause him to act. It is excellent policy to inform students early in the lesson, unit, or course just what it is they are supposed to gain from the instruction and convince them that the learning is worthwhile. If the students think your objectives are desirable and adopt them as their own, the learning process is well on its way. If they do not, you must resort to some other motivational scheme, or fail. One technique that has good motivational effect is to ask students to choose their own objectives from among alternative objectives. Another is to encourage student to set up objectives as part of a teacher-student planning activity. Knowledge of the goals and feedback concerning one's

progress are among the best motivators of student learning. More often than not, if students know what it is they are supposed to learn, they will try to learn it. When teachers state their specific objectives as learning products, students are quite likely to accept them as legitimate objectives and work to achieve them.

Once you have selected and described your objective, it is time to decide upon the learning activities and upon the way you will organize and conduct these activities. When planning the learning activities, you should be guided by several considerations. First, there are many different methods or techniques that may fit the bill. Bruce Joyce and Marsha Weil have identified more than eighty different "models of teaching," each of which is slightly different from the other models and useful for a slightly different purpose. Presumably the learning resulting from each of these models will be somewhat different from that resulting from any of the others, for teaching strategies do make a difference in what students learn and how well they learn it. In fact, how one learns may have as much impact on one's final understanding, attitude, or skill as the subject content.

To a certain extent teaching strategies are, for practical purposes, a part of the content. Thus if a teacher uses a method that encourages creative thought, the chances are that teaching will kindle not only a fuller understanding, but also a greater inclination to think creatively than if another method had been used. Therefore take care to choose the type of learning activity that fits your objectives. This is not to say that only one specific method can achieve your objective or that one method is necessarily the best for your purpose. No learning activity guarantees the attainment of any particular objective (most learning activities can be used for several types of objectives). Neither can you depend on any method to stand long alone. One should always

try to support it by other strategies and techniques that will combine their impact to produce the learning you desire.

Nevertheless some strategies are likely to be much more useful than others for your purposes. For instance, if the goal is to teach information or basic skills, try direct telling and showing mastery learning procedures, questions directed toward specific contents or skills, practical constant checking, and immediate feedback. These strategies will probably be most effective if the content is offered in small incremental steps. In any case the teacher should point out what is to be learned and why.

If the goal is to develop social attitudes, try case studies, guided questions, laboratory procedures, action learning, independent investigation, group investigation, and problem solving or other strategies that feature inquiry, practice of social analyses, and observation of oneself and other people.

If the goal is self-development, try nondirective, nonthreatening student-centered activities concerning "practical problems, personal issues and research problems, moral dilemmas, and moral problems." Group discussion seems to be an effective technique for executing such strategies.

If the goal is to develop information and problem-solving skills, try inquiry, problem solving, advance organizers, and inductive questioning, and follow inductive techniques and the methods of the discipline. One concern is to pick an approach that will bring about your most desired objectives without interfering with other desirable learning. However, that problem is not as bothersome as it may seem since most learning activities can be used for more than one type of objective. If you concentrate on selecting methods that will further your

principal objective, you will probably also attain your secondary goals.

Second, learning activities, as we have seen, can carry out different roles in the teaching process. Some are excellent for motivating; some for clarifying; some for skill development; some for clinching the learning (closure) and so on. Try to pick learning activities that will maximize the effects you are seeking.

At the beginning of a unit or lesson, for instance, try to use an activity that will catch the students attention or attract their interest. Telling a simple anecdote may do the trick; so may facing them with a problem situation, or a lively discussion on a relevant issue. The use of an advance organizer, or a description of what the unit or lesson will cover and why, and what will be expected of the students, may help the students set their directions. Involving may spark student interest and stimulate their willing effort and cooperation.

In the development portion of your class you might act as a manager of instruction, or as a coach, or as an inquiry trainer. You might help students develop concepts and intellectual skills by such operations as problem solving. Socratic discussion, practice in logical decision making, drawing of inferences, and determining facts. Or you might fill in students' background and widen their horizons by the skillful use of lectures, demonstrations, audiovisual media, careful questioning, and other clarifying operations.

To develop skills you might use show-how activities and practice. Review, practice, reinforcement activities, role playing, discussing points and issues, and tests may serve to drive home the desired knowledge and skills and to tie the learning together. Security-giving operations are particularly necessary for promoting a supportive classroom climate. The methods one uses

should be adapted to the classroom situation. When it seems desirable one should change one's technique so as to add to the class structure; other times it may be better to make the class looser. More often than not decisions of this sort must be made according to your feel for the situation. Your choice of techniques does not have to follow any rigid pattern.

Third, individual students react differently to various methods. In a sense, as Bruce Joyce points out, the students are really part of the method for it is they who do the learning. What they do, their attitudes, their abilities, and so on determine what is learned. The method influences the outcome in any learning situation, but does not determine it. Therefore the learning activities selected should be compatible with the students abilities, style of learning, and prerequisite for an activity should not be expected to attempt the activity until they have the necessary background, knowledge, or skill.

On the other hand, students who have excellent background and skills should not be sentenced to relearn things they already know or can do. Similarly, students should not be forced on a steady diet of activities that are incompatible with their learning styles. Students who are not very flexible need structures activities, whereas flexible students will be more productive in less structured classes.

Similarly sociable students will fit into social group types of activities more readily than do less social students, whereas creative youngsters react more favorably to methods calling for divergent thinking and originality than do less creative types. Perhaps the most reasonable way to match students' capabilities and attitudes would be to individualize your teaching in some fashion. Another approach would be to use a variety of activities so that all students would have compatible learning experiences at least part of the time.

Fourth, insofar as is feasible, the activities should be appealing to the students. Although philosophers tell us there is no royal road to learning and that much of school learning must consist of hard work that students must do willy-nilly, you will get a lot more mileage out of your plans if they contain learning activities that are appealing to the students.

Teachers who push hard at mastery teaching, for instance, find that after a while students get sick of striving so that it pays to introduce a change of pace at times. There is always a place for exciting content in every course. Films, dramas, simulations, discussions, games, real problems, field trips, and the like can add interest and student involvement to classes. Although you do not want your classes to become slack, an occasional relaxed class may make your total effort more effective. A little fun and excitement never hurt anyone.

Fifth, you should also consider your own abilities, aptitudes and preferences. We all have methods and techniques with which we are more comfortable. Ordinarily we are more effective when we use them. Too many teachers, however, have only a small repertory. If you limit yourself to only a few approaches, you soon become dull, repetitive, and ineffective. Besides you need to have a number of methods and techniques at your fingertips to cope with the different teaching goals and learners, to create the type of climate you wish, and to give variety and depth to your teaching.

Sixth, you should bear in mind such practical factors as the time and space available, supplies and equipment needed, expense and health and safety.

Seventh, subject matter is an integral part of the learning activity: Without subject matter there can be no learning activity. When appropriate, the learning activity should include high level cognitive, affective, and

Psychomotor subject matter rather than being restricted to simple information and low level skills. Be sure that the subject matter you select contributes to the objective. Remember that subject matter content is a means to an end and not an end in itself. The end is to attain your teaching objectives.

Eighth, the teaching strategies and techniques that make up your learning activities must be suited to the subject matter to be taught.

Ninth, each of the learning activities you use should be aimed at least one of your teaching objectives, and every teaching objective should have at least one learning activity aimed at it.

Finally, once selected, the learning activities must be arranged into a sequence or an organization for learning. This organization is, in effect, the body of the course, until or lesson.

You should plan for evaluating the students' progress and the success of your courses, unit or lesson before you begin to teach it. Some experts of the competency-based education persuasion say that you should do so before planning your learning activities. This does not mean that every lesson plan should have a section entitled evaluation. It does mean that you should consider how you are going to assess student learning for each one of your objectives, determine the procedures you will use, decide the weighting of the various elements in your evaluation, and build the instruments before you start to teach. Hence, for instance, the unit test for a unit, if there is to be one, should be written before instruction in the unit begins.

1. Any teaching-learning activity that is not aimed at one or more of your objectives is useless and should be discarded.

2. Any teaching-learning activity that is not of a kind suitable for bringing about the learning desired is useless and should be discarded.
3. Any evaluation plan that does not assess the attainment of the teaching objectives fully and evenly is incomplete and should be discarded, rebuilt or supplemented.
4. Any evaluation item that does not assess the attainment of one or more of your teaching objectives is useless and should be discarded.

Make up two or three instructional objectives for a lesson you might teach. Give a half dozen learning activities you might use to achieve each of these objectives.

School district curricula, programs of study and course syllabi are generally planned by committees of teachers and supervisor or administrative personnel, or by central district office staffs. We shall not concern ourselves with this sort of planning. Planning for what actually happens in classes is the work of individual teachers who sit down with themselves and figures out what it is they want to do and how they want to do it.

Presumably this is as it ought to be, if it is not overdone. Sometimes, however, courses, units, and even individual lessons are carried on as teacher team projects. This type of planning may be part of a formal teaching team arrangement or simply an informal *ad hoc* arrangement between colleagues.

An example of such a flexible arrangement is that in which a social studies teacher and an English teacher finding that they by chance shared the same group of ninthgraders decided to collaborate on their assignments. Another more formal arrangement is that in which the social studies, science, and English teachers agreed to cooperate on the assigning and reading of major research

papers. Another more formal type of team planning arrangement in a middle school involves multi-disciplinary teams which share the same students in their classes.

The members of a team meet regularly to coordinate the planning in the various courses. In such planning the team members might agree to share assignments, or agree not to give long, difficult homework assignments or tests on the same day, or discuss the strengths and weakness of various students and work out special assignments and activities for them. Still another type of team planning is that of the formal teaching team of the so-called Trump Plan in which different teachers play different roles, some conducting large groups, some small groups, and so on. Teams of this sort require careful planning. To allow sufficient time for such planning, team-planning sessions may be incorporated into the daily schedule.

Except for the fact that it is done cooperatively by the team, team planning is not so very different from other planning. The problems of what, how, when, and where bear the same importance in cooperative efforts as in individual planning. The real difference is that the planning is complicated by the need to merge the varying notions and inclinations of several teachers into one unified, workable whole. Bringing about such harmony requires team members who are well versed in group process and careful attention to details so that each member knows what to do and how and when to do it. It also requires an infinite amount of following through and checking to ensure that the plans are properly executed. Team planning does not necessarily imply teaching teams of any sort. Teachers who teach the same or similar courses may collaborate on the planning of course sequences and course content. Such planning can be

instrumental in making a harmonious, well-articulated curriculum.

In a social studies classroom a group of junior high school students were conducting a lesson. This lesson consisted of a series of committee reports on research projects just completed and a class discussion of the implications and significance of each of the reports under the quite capable direction of the young lady in charge.

The young lady was a ninth-grader. The lesson, the culmination of several weeks work, had been organized and conducted by the students under her chairmanship. Three or four weeks before, the students had selected their topic from a short list of alternatives suggested by the teacher as one naturally following from their previous unit. In a group discussion they had decided the various facets of the topic they thought ought to be the most important to investigate. Then they formed committees to look into the various aspects of the topic to be investigated and to report to the group what they had learned. But before letting the committees start their work, the class as a whole had set up a set of standards to guide them in their research and to use in evaluating their success. Now they had come to the last step.

Almost every activity in this unit had been planned by the students themselves under the surveillance of the teacher. At no time had the teacher dictated to them just what they must or must not do. Neither had she ever left them without support or guidance. She was always there to remind them of the essentials, to suggest alternatives, to point out untapped resources, to correct errors, to question unwise decisions. This sort of teaching is teacher-pupil planning at its best. To do it well requires great skill, much forbearance, and the careful training of one's students.

Cooperative teacher-pupil planning is an excellent method for involving students in the learning process. It is particularly effective in long-term planning (for example, unit planning) and the planning of individual projects. Furthermore, involving students in planning can also aid motivation. No one knows what students find interesting and important better than the students themselves. In addition, once the group has planned an activity, if the planning has been really successful, it becomes a group concern. Students who fail to do their part not only face the displeasure of the teacher, but let down the group. But, probably most important of all, teacher-pupil planning offers one a laboratory in thinking, in making choices, in planning and in learning to work with others-in short, in democratic citizenship.

Yet, in spite of its many virtues, teacher-pupil planning is not suited to every course and every teacher. To ask students to plan the topics in a course whose sequence is largely determined by the nature of the subject matter-as in mathematics-seems pointless. Besides, the students may not have enough information about the subject at hand to know what can be learned, its potential values or how to proceed. In order to plan well, one needs information.

Cooperative teacher-pupil planning is not student planning. It does not relieve you from your responsibilities and role as mentor. You must guide and limit; seldom, if ever, should you turn the students completely free. The amount of freedom the students should have depends upon many things, such as the students' maturity, their ability level, the subject, and their previous experience in cooperative planning. Students who have not learned how to plan will be overwhelmed if suddenly allowed to direct themselves.

Many resources are available to help you in your

planning. Among them are textbooks, commercially developed courses and curriculum materials, curriculum guides and syllabi issued by local school authorities, curriculum bulletins from state and federal school agencies, and resources units.

In some districts curriculum guides specify in great detail what should be taught and how it should be taught, but usually these materials are suggestive only. When this is true, how closely you should follow the text or the school curriculum guide is up to you. Perhaps at first, at least until you feel at ease with teaching and the course, it is wise to follow their suggestions rather closely.

You may find considerable help from the curriculum guides published by other school districts. A typical New York City curriculum bulletin for a social studies course, for instance, includes in addition to such general background matter as the nature and structure of history, placement of social studies skills in the curriculum, and the scope and sequence of the New York City social studies curriculum—an outline of the course, suggested learning products for each of the various units or themes, a great sampling of suggested learning activities, and a list of recommended learning materials.

Curriculum bulletins published by state departments of education are also helpful. So are such professional journals as *The English Journal*, *The Mathematics Teacher*, and *Social Education*. Many of these list suggestions that can be particularly helpful for specific lessons.

Resources units can be especially valuable when planning units and lessons. They usually include such helpful information as.

— An overview

- A list of desired outcomes divided according to
Understanding.
Attitudes.
Skills.
- An outline of content.
- A list of activities divided according to
Initiatory activities.
Developmental activities.
Culminating activities.
- An annotated bibliography.
- An annotated list of films.
- An annotated list of filmstrips.

ERIC Clearing Houses have multitudes of inexpensive resources available in microfiche. Collections of suggested teaching objectives are available from such organizations as IOX Assessment Associates, and in books such as Westinghouse Learning Press's Mathematics Behavioral Objectives.

Secondary education has been traditionally considered as a half-way house between elementary education and higher education. There is no axiomatic matter which it should hardly be necessary to impress on all concerned with education whether politicians, administrators, tax payers or parents—that is the paramount importance of the teachers. From whatever angle we approach the different problem of education we shall always find that the teacher is the main issue and the determining factor. The success of the entire system of education depends upon a band of well-trained and devoted teachers. Important as is the role of the teacher in all stages of education there are certain special features in secondary education which make this role the most crucial one. Because the students of secondary stage of

education lack the docility and dependence of elementary school children on the one hand and they are yet to develop the maturity and independent attitude of the college students.

Consequently the secondary school teachers all over the world have to play a significant and decisive role in furtherance of the aims of education. Coming to the question of the status of teachers in secondary schools in Assam we find that in general they were the servants of the Government or the Municipality, Local Board and individuals. Their personal status depended on the class of service to which they belonged. Broadly speaking the teachers of the Government schools were eligible for pension, teachers of Broad Schools subscribed to Provident Funds and the teachers of private schools received no general fund benefits.

As regards the academic qualifications and efficiency of teachers working in the secondary schools of Assam prior to 1882 there is practically no written record except that of the Inspector of Schools. Mr. J. Wilson who wrote in 1879 that the teachers of High and Middle schools which received aid under grant-in-aid rules were the most efficient ones and the condition of the teachers of aided and private schools were the most deplorable. In the absence of any statistical data in respect of the number of teachers in different secondary schools of Assam prior to 1882 it is not possible to judge the strength of the schools in respect of staff.

Boards of secondary education

The feeling that the universities were dominating secondary education and that an attempt should be made to see that secondary education independently of the universities, led to the creation of Boards of Secondary Education which were responsible for laying down syllabi and for conducting examinations at the school

final stage. The secondary school leaving certificate was expected to furnish full information as to the progress of the pupil during the whole period of the school course as well as in the public examination conducted at the end of that course. On the basis of these records it was left to employers and to principals of university colleges to entertain them in service or to admit them to college for such courses of study as would suit them in the opinion of the principals concerned. The next important stage was the appointment of the Calcutta University Commission in 1917 under the Chairmanship of Sir Michael Sadler. This Commission went into the question of secondary education and held the view that the improvement of secondary education was essential for the improvement of university education. During the subsequent period there was a great expansion of secondary education and the number of secondary schools began to increase both in rural and urban areas largely owing to the interest evinced by the public and generous donations on individuals and institutions.

In 1929 a committee was appointed known as Hatrog Committee, to review the position of education in the country. In the opinion of this Committee, the Matriculation examination conducted by the university still dominated the secondary course. The Committee recommended for a more diversified "curricula in the schools". It reviewed the position of the training of teachers and service conditions of secondary teachers. The Sapru Committee was appointed in 1934 to enquire into causes of unemployment. The Committee remarked that "the real remedy is to provide diversified courses of study at the secondary stage and to make that stage more practical and complete in itself and more closely related to the vocational requirements of different types of students. At the secondary stage, there should be parallel

courses offering instruction in technical, commercial, industrial and other vocational subjects."

The Central Advisory Board of Education which is an all India advisory body set up by the Government of India, submitted a comprehensive report on post-war (Second World War) educational development containing certain important recommendations. (The report is also known as Sargent Report). It recommended that high school courses should cover six years and the normal age of admission should be about eleven, entry to high school should be on a selective basis, high schools should be of two main types: (a) academic and (b) technical. The objective of both should be to provide good all-round education combined with some preparation in the later stages for the careers which pupils will enter on leaving school.

Secondary education during the pre-independent era underwent certain slow changes. Some significant trend were: (i) There was a general demand for secondary education mostly due to the awakening among the masses. (ii) A number of secondary schools were established in rural and semi-urban areas with a view to bringing secondary education within an easy reach of the children of those localities, and (iii) Secondary education made a progress amongst women and less advanced communities. However according to Hampton "The whole systems is rigid and inelastic and is characterised by a dull and monotonous uniformity. On the whole, India has been well served by expert advice but, despite the recommendations of various committees and commissions, little has been done to adapt an outworn system to the conditions of modern life. Indeed, it is only a slight exaggeration to say that the Indian high school with a few notable exceptions is much the same today as it was in 1904 and little change from what it was as far back as 1884."

Development since independence

Tarachand Committee suggested that secondary schools should be of the multi-purpose type though uni-purpose schools were not to be discouraged. In the same year University Education Commission was also appointed by the Government of India to review the position of university education in India under the Chairmanship of Dr. Radhakrishnan. It remarked that "we have lost 30 years by neglecting to raise the standards of our high schools and intermediate colleges as recommended by the Calcutta University Commission and it is time we realized that our secondary education remains the 'weakest link' in our educational machinery and needs urgent reform. On the recommendations of the Tarachand Committee and the Central Advisory Board of Education, the Government of India appointed a commission on September 23, 1952, under the Chairmanship of Dr. A. Lakshmana Swami Mudaliar. The Commission was directed to examine the prevailing system of secondary education in the country and to suggest suitable measures for its reorganization and improvement. The Commission made the following recommendations on various aspects of educational reconstruction at the secondary level.

1. Three years of secondary education with a marked diversification of subjects so as to cover the period from 14 to 17.
2. The diversification of secondary curriculum through the conversion of selected high schools into multipurpose schools.
3. All stages should provide special facilities for agricultural education in rural schools and such courses should include horticulture, animals husbandry and cottage industry.
4. The mother tongue or the regional language should

generally be the medium of instruction throughout the secondary school stage, subject to the provision that for linguistic minorities special facilities should be made available on the lines suggested by the Central Advisory Board of Education (CABE).

5. Education for character, developing good citizenship qualities and leadership qualities must be the important objectives of secondary education.
6. There should be only one public examination at the completion of the secondary school course.
7. The certificate awarded should contain besides the results of the public examination in different subjects, the results of the school tests in subjects not included in the public examination as well as the list of the school records.
8. Secondary school should be established in rural areas in central places with sufficient population which are easily accessible to the surrounding villages.
9. As a rule total number of working days in a secondary school should not be less than 200, the working hours/week should be at least 35 periods of about 45 minutes each; the school should work regularly for six days in a week, one of the days being a half day when the teachers and students might meet informally and work together on various extra-curricular and social projects.
10. The commission recommended that secondary education should commence after four or five years of primary or junior basic education: (i) middle or junior secondary or senior basic stage which should cover a period of Grand three years; and (ii) a higher secondary stage which should cover a period of four years. The Commission also suggested that period of

training at the secondary education stage should be raised, since at present the standard attained by students who seek admission to the university and to other higher courses is low and that the average age of entrance is also low. The Commission proposed the abolition of the present intermediate (10+2) stage to be replaced by the higher secondary stage, which will be four years duration, one year of the present intermediate being included in it. The Commission further suggested that the first degree in the university should be of three years duration.

Most of the recommendations of the Commission were accepted by the Central and State Governments and were implemented. High schools were upgraded to higher secondary schools and some high schools were converted into multi-purpose schools. The recommendations were incorporated into the successive Five Year Plans and began to be implemented. The scheme of multi-purpose schools was introduced in India in 1954. However, due to various reasons it was not fully implemented. Looking at the entire report of Secondary Education Commission, it must be admitted that the implementation of the recommendations has not been very encouraging.

A 'Discussion Paper on Major problems of Secondary Education' issued by the Education Commission in 1965 stated that the major defects mentioned by the Commission continued to persist in most of the secondary schools even then. The curriculum was still narrow and one-sided and not designed to develop the full personality of adolescents. The influence of external examination still dominated the activities in the average secondary school.

There were some focus points in the report: agriculture education was considered very important but not concrete measures were suggested, not was any

recommendation made regarding the methods of co-ordination between growth and economy, manpower needs, employment opportunities and the output of secondary school. Planners of the First Five Year Plan, therefore confined their remarks only to a few of the more important and wider considerations. In the First Five Year Plan period (1951-56), it was planned to open new schools, reform old ones and reorganise secondary education to make it more scientific and psychological. It was also suggested that the ideal schools should be protected and encouraged.

In regard to the curriculum, the subjects included were physical education, military education, gardening, agriculture and music, etc. During the First Five Year Plan period 6,200 additional secondary schools were opened, with an enrolment of about 15 lakh pupils. Under the Central Government scheme of 'implementation of recommendations of Secondary Education Commission' Rs.2 crores were sanctioned to 12 states during 1955-56.

During the Second Five Year Plan special scholarship schemes were recommended. With a view to improve science teaching secondary schools, 130 science clubs were started in 1958-59 and 183 new clubs were added in 1959-60. The percentage of girls receiving education rose from 4.0 percent to 11.5 percent by the end of second plan. It constituted less than one fifth of the total number attending secondary schools. At the end of second plan about 4.2 percent girls availed of high school education as compared to about 18.9 percent of boys in the age groups 14-17

After the Second Plan, progress in the Third Plan (1961-66) was seen in the following areas: (i) provisions were made for the teaching of science, (ii) there was an improvement and increase in the number of multi-

purpose schools, which were established during the Second Five Year Plan. Many new higher secondary schools were established and many existing secondary schools were converted to higher secondary schools. By the end of Third Plan 2,000 schools were transformed to higher secondary schools and 4,000 new higher secondary schools were started. Indian Education Commission, appointed on 14th July, 1964, examined the various aspects of education and submitted a comprehensive report 'Education and national Development' in 1966. It advocated the restriction of unplanned and uncontrolled expansion of secondary schools, in keeping with estimate of required man-power. In planning enrolments in secondary education two factors had to be kept in mind. First, the position of expansion; the standards had deteriorated and educated unemployment had increased. Secondly, better standards of living and the desire for more education would further increase the pressure of expansion in future. At the lower secondary level, tests should be designed and guidance provided to enable a student to make his choice whether he should leave the school to take up a job or join a vocational course or continue the course of general education. Beyond the lower secondary stage a system of selective admission would be essential.

The Commission found it essential to vocationalise secondary educations and to work towards a target wherein about 20 percent of the enrolments at the lower secondary stage and about 50 percent at the higher secondary stage would be in vocational education. Equalization of opportunities in secondary education, through liberal scholarships and the identification and development of talent were greatly emphasised. Pupils, other than those who were diverted to a vocational education, were to have a common curriculum of general education up to class X as there would be no 'streaming'.

of specialization in the general course. This proposal was quite different from the scheme of multi-purpose schools which had been greatly stressed by the Secondary Education Commission and vigorously implemented in many states.

The multi-purpose schools required diversification into a variety of courses after class VIII, to suit the different interests and aptitudes of students, and yet most of such schools failed to do so. The 'Indian Education Commission' observed that, the trends in secondary education were in the direction of lengthening the period of general education and postponing secondary education. On the basis of recommendations of the Indian Education Commission, a resolution on national Policy on Education was passed, which outlines the following principle for secondary education: "Education opportunity at the secondary level is a major instrument of social change and transformation. Facilities for secondary education should accordingly be extended expeditiously to areas and classes which have been denied these in the past". The main efforts in the Fourth Plan was to enrich the content and improve the quality of secondary education. A few states took preliminary steps to adopt the new pattern of secondary education, recommended by the Education Commission and proposed to complete the change-over during the Fourth Plan.

The achievements of the Fourth Plan can be summarised as follows: There was an expansion of secondary education, the enrolment of boys increased and in case of girls the increase was 13 times. But nothing was done to implement the recommendations of the Indian Education Commission regarding the restructuring of secondary education. No steps were taken to vocationalise education and students continued to proceed to colleges for advanced education. At the

secondary stage special programmes for encouraging girls education was launched.

In the Fifth Five Year Plan period (1974-79) provisions were made for 250 girls hostels and 0.1 million scholarships to ensure growth in the education of girls. Facilities were also provided for scholarships and hostels in rural areas. One more lakh (0.1 million) scholarships were offered for students coming from weaker sections. Facilities were provided for the qualitative improvement of education, so that it could be imparted with skill, efficiency and productivity.

The Sixth Plan (1980-85) proposed that the importance of secondary education to prepare manpower for economic development should pay special attention to the quality of education at this stage. Appropriate science kits for the secondary schools were proposed to be designed, produced and supplied to high and higher secondary schools. The educational system would also reorganise the needs of the exceptionally talented children in society and give them opportunities for taking up special courses or programmes of studies suited to their talent and thus nurture the valuable talent as a national resources.

While dealing with the problems in the development of education at various levels, Sixth Plan document states that under-utilization of existing resources at all levels, continuance of non-viable and uneconomic institutions and their haphazard growth have come in the way of development in education and it is a matter to be considered seriously before drawing further plans.

In addition, it states "attention is needed in regard to low pass percentages in various public examinations, isolation of educational institutions from the community and lack of co-ordination with other developmental departments and agencies. One of the significant

development during the period of the Seventh Plan (1985-90) is the formulation of a national policy on education. The policy document passed in May, 1986 clearly recognises the importance of secondary education for a developing country like India.

It states that "secondary education begins to expose students to the differentiated roles of science, the humanities and social sciences. This is also an appropriate stage to provide children with a sense of history and national perspective and give them opportunities to understand their constitutional duties and rights as citizens. Conscious internalization of a healthy work ethos and the values of a humane and composite culture will be brought about through appropriately formulated curricula. Vocationalisation through specialised institutions or through the refashioning of secondary education can, at this stage, provide valuable manpower for economic growth. Access to secondary education will be widened to cover areas unserved by it at present. In other areas, the main emphasis will be on consolidation".

Further the policy implies providing special arrangements for the gifted children and the high achievers. This would mean that it would require:

- (a) Programme to ensure access to secondary education being widened to cover unserved areas;
- (b) Programme of consolidation in other areas/schools;
- (c) Programme of setting up Navodaya Vidyalayas; and
- (d) Programme to improve the management system and improved supervisory system are the most important and should be the main programme during the 7th Plan and would continue thereafter.

While recognising the state of education in rural areas the programme of action document states "It is known that

the secondary and higher secondary schools are under-provided particularly in the rural areas in terms of buildings, teachers and schools facilities but the extent of these shortages have not been surveyed in all aspects". The programme of consolidation envisaged in the policy will have the following components of which the cost cannot precisely be estimated:

- (a) Adequate playground facilities, where needed, will have to be provided by making available nearby vacant land and in other places by arranging for sharing of such facilities with neighbouring school as a priority programme during the Seventh Plan.
- (b) A programme for construction of additional class rooms and laboratory facilities in schools to the extent they are deficient will be taken up. School education is mainly looked after by the State Governments and local bodies. If possible the Central Government may consider supplementation of resources.
- (c) Every school must have laboratories and other facilities as specified in the terms of recognition of the Board of Secondary/Higher Secondary Education.
- (d) The teacher competencies would be improved by attracting better qualified people to the profession as envisaged in the policy.
- (e) Educational consolidation will be done through the core curriculum in the country.

Ecological and demographic features

During the British rule present-day Karnataka comprised of the princely states of Mysore, Hyderabad and the British provinces of Bombay, Madras and Kodagu. The formation of the present state represents the fulfilment of the age old aspiration of Kannada speaking people to come together in a single state. The old kingdom of Mysore formed the nucleus of this state. Under the State

Reorganisation Act the confederation of Mysore integrated itself in 1956, with the districts of Uttara Kannada, Bijapur, Dharwad and the major portion of Belgaum District in the old Bombay State, the major portion of Gulbarga, Raichur and Bidar districts, from the princely state of Hyderabad, the Dakshina Kannada and Bellary districts from the Madras province and the independent Kodagu district.

Karnataka is situated on the western edge of the Deccan Plateau and has for its neighbours Maharashtra and Goa on the north, Andhra Pradesh on the east and Tamil Nadu and Kerala on the south. On the west it opens out to Arabian Sea.

Population of the States has increased from 29.299 million in 1971 to 37.043 million in 1981. The population of scheduled tribes has increased from 3.85 million and 0.231 million to 5.595 million and 1.825 million in 1981. The proportion of their population to the total population has also increased considerably from 13.14 percent and 0.79 percent in 1971 to 15.10 percent and 4.92 percent in the year 1981 respectively. These data are shown in table 5 further, the growth rate of scheduled castes population is more or less close to the general population. In the case of scheduled tribes the growth rate is less than the state average during 1961-71. But during 1971-81 the annual growth rate has exceeded to 15.50 percent. This high increase in growth rate is due to certain communities with similar nomenclature declaring themselves as scheduled tribes.

It has been recognised that education (whether formal or informal) is a must for several reasons. Education promotes occupational and social mobility, it enables adaptation of innovations in technology and aids in effective political participation. This also helps to bridge the gap between different social groups.

Recognising the importance of education, a rapid expansion in providing educational facilities has taken place in the state. Literacy rate of the state has increased from 31.52 percent in 1971 to 38.41 percent in 1981. However, the position of Karnataka in its literacy rate in the nation has moved down to 18th place (in 1981) from 14th place in 1971. The literacy rate of the state is above the national average. (36.17 percent) in 1981.

The 1971 and 1981 census have shown lower levels of literacy among scheduled castes and scheduled tribes compared to the general population. The extent of population belonging to this group with higher education (matriculation and above) is negligible. In rural areas the literacy rates of scheduled caste and scheduled tribe males are nearly one-third of the levels observed among the general population. Among females the literacy levels are much lower by nearly one-fifth of the general population.

To get a clear perspective of secondary education in the state, the position of secondary education prior to reorganization and secondary education after the reorganization is presented in the foregoing paragraphs.

The first Government high school in the princely State of Mysore was started in Bangalore in 1858, affiliated to the University of Madras. Later, the mission schools at Tumkur, Shimoga and Hassan and the Maharaja's School in Mysore were taken under the Government management. In 1871-72 there were 11 high schools teaching upto matriculation standard. At the time of reorganization there were 266 secondary grade schools with 84,017 pupils. Secondary education in the state consisted of two stages, the middle schools stage and the high school stage and was imparted in four types of institutions, i.e., the primary school with vernacular lower secondary classes, the vernacular upper secondary

schools, Anglo-vernacular schools and the high schools. Candidates passing out of upper secondary schools were not permitted to join the high schools unless they passed the English part of the middle school examination.

In 1910-11, there were 16 high schools with a pupil strength of 3,435. Till 1930-31, the medium of instruction in high schools was English and in that year Kannada was introduced as the medium of instruction to the first year class of high school. The SSLC scheme was introduced at the secondary level during 1913 and the revised curriculum was introduced from 1937-38, introducing the compulsory group and the elective groups. The entry of District Boards in the field of high school education in 1948-49 facilitated a rapid increase in the number of high schools and the students in the state.

In the year 1882, there were four high schools in the Bombay Karnataka, one aided missionary school at Belgaum and three Government high schools, one at Dharwad started in 1848, the Sadler English school, Karwar. There were ten first grade and 47 second grade Anglo-vernacular schools in the southern division i.e., Kannada region, including the five native states. The Government had the policy of opening one Government school in each district headquarters and so, government school was established at Bijapur in 1890.

Christian missionaries and the municipalities started taking interest in establishing high school, and so by 1921-22 there were 19 high schools. Education societies such as KLE Society and Karnataka Education Board which had the keen interest of opening new educational institutions were formed and they had the potentials of speedy growth. In 1838-39 vocational high schools were also started. By 1939-40 the Government high schools for boys were closed and by the end of March 1956, there were 128 high schools with students strength of 41,571. Of these, only nine were Government high schools.

Secondary education in the Dakshina Kannada district made its beginning with a missionary school affiliating itself to university matriculation course by 1860-61. By 1881-82, there were two high schools with 192 scholars which rose to four with a pupil strength of 400 by 1891-92. A number of secondary schools were started by the private agencies which resulted in the expansion of secondary education in the early decades of 20th century. The organisation of secondary education was taken up in the districts of Bellary and Dakshina Kannada in 1923, with the setting up of District Secondary Education Boards. During 1931-32, there were 17 high schools which rose to 29 in 1946-47 and on to 64 in 1951 with a pupil strength of 24,600. In the district of Bellary, the Wardlaw High School founded in 1845, is the oldest high school in the district. In 1881-82 there were two high schools with 57 scholars which rose to 11 schools during 1946-47.

In Kodagu region the matriculation class was introduced in the central high school, Madikeri to raise it to the status of a high school in 1879-80. By the end of 1946-47 there were seven high schools in Kodagu out of which two were government and the others were private. Till 1944 English was the medium of instruction and later Kannada was introduced. At the time of reorganisation there were five government and six private schools.

After reorganization and the formation of a new state, the term 'secondary education' applied differently to schools and classes in different areas. In Old Mysore region it applied to schools in which a three-year course was provided. Secondary education was mostly under government management and some under District Boards and Municipalities. In Bombay-Karnataka region, it was applied to schools with four years duration from standards VIII to XI. Most of the secondary schools were

under the private sector with a small number of schools under government and local bodies. In former Madras region, the term was applied to a three-year course. Most of the high schools were under private management and there were also some high schools under boards. In Kodagu, there were private as well as government schools. All the schools in Dakshina Kannada were of composite type. In Hyderabad region, high school education was of three years duration and in that area alone along with primary education, the duration of school was ten years. In 1956-57, there were 535 secondary schools for boys and girls and two military high schools with a total enrolment of 1.25 million. The strength in the two military schools (at bangalore and belgaum) was 471, all boys. There were 31 schools under Bombay-Karnataka region classified under lower secondary schools with high school classes attached to them.

During the year 1958-59, the middle-cum-high schools in Hyderabad-Karnataka region were made composite government high schools and a large number of high schools also came up. The number of high schools increased from 535 in 1956-57 to 1,833 in 1968-69. The number of students increased from 0.125 million in 1956-57 to 0.46 million in 1968-69. The expenditure on secondary education increased from Rs. 14.429 millions during 1955-56 to Rs.63.948 millions in 1968-69. The cost/pupil at current prices also increased from Rs.84.55 to Rs. 122.21 during the same period. However, with these quantitative expansion, the set-up, syllabi and examinations in vogue in the different regions of the state presented a complex problem.

Secondary examination board

Secondary school certificate examination was conducted by the Board of Secondary Education, Madras, for

Kodagu, Dakshina Kannada and Bellary Districts. Similarly, students of Belgaum, Bijapur and Uttara Kannada districts took the secondary school final examination conducted by SSC Board, Bombay. Students in Bidar, Gulbarga, Raichur districts appeared at the school final examination conducted by the Hyderabad Higher Secondary Certificate Examination Board. The students of Old Mysore region took up the examination conducted by the Department of Education till 1963. In the year 1963 Mysore State Education Examination Board conducted a common school final examination at the State level for the first time. The Mysore Secondary Education Examination Board (a statutory body now called Karnataka secondary Education and Examination Board) was constituted according to the provisions of the Mysore Secondary Education and Examination Board Act 6 of 1966. To this Board the responsibility of conducting the school final examination at the state level was transferred.

It was proposed to split the scheme of examination into two levels-ordinary and advanced levels in accordance with IV. Five Year Plan but it was not done so. At present all the students appearing to the school final examination from the nineteen districts (twenty educational districts which includes Bangalore rural district) of the state take up the examination conducted by the Board in the month of March-April. As the proposed programmes of IV Five Year Plan could not be satisfactorily completed the programmes were carried through even to the Fifth Five Year Plan of the State. Even in this Plan it was proposed:

- (1) To keep expansion by way of starting new schools at the absolute minimum, as the requirements arising out of additional enrolment is proposed to be met by putting the existing facilities to optimum use. Greater

emphasis was given for improvement of quality, with the proposals of starting pace setting secondary schools.

- (2) To give ad hoc grants to private secondary schools to supplement the efforts of the government in expanding the facilities for secondary schools. Further, the plan document stated that "The existing high schools are in need of additional equipment like library and furniture. There is bound to be further need in view of additional enrolment in the Fifth Plan. Providing good library and the physical facilities will certainly help in improving the quality of education". It was proposed to provide Rs.5.0 millions for 1,000 schools at the rate of Rs.5,000 per school.

For improving the quality of school education it was proposed to establish State Council for Educational Research and Training, provisions were also made for the academic units to cover the requirement of secondary education.

Certain special provisions were also made for the students of weaker sections.

1. Establishment of Book Banks in the secondary schools. For this purpose Rs.2.0 million was proposed to be sanctioned for 1000 schools at the rate of Rs.2,000 per school.
2. Special coaching facilities for students: This was to improve their performance and attainment. It was proposed to establish resources centres in all the high schools in a phased programme.

The state of affairs was not found to be improved even during the Sixth Plan period and hence the unfinished business of improving the quality of the schools by expanding facilities continued.

The schemes undertaken by the state and the Central Governments to improve the school enrolment and educational attainment among, scheduled castes and scheduled tribes include: (a) scholarships, (b) hostel facilities, (c) Ashram schools, (d) special coaching programmes, and (e) prizes/awards for outstanding students. (a) Scholarships: This scheme is aimed to provide financial assistance to the scheduled castes and scheduled tribes who are not staying in hostels. Three types of scholarships viz., (i) pre-matric scholarships, (ii) post-matric scholarships and (iii) merit scholarships are awarded.

Pre-matric scholarships are sanctioned to scheduled caste/scheduled tribe students who are not residing in the hostels. These scholarships are sanctioned at Rs. 75 per annum, per student for those in middle schools (5th to 7th standard) and Rs. 100 per annum, per student for those in high schools (8th to 10th standard). This scheme is under the implementation from the beginning of Third Five Year Plan with a break in the middle on account of the heavy cut in the budget due to emergency. But it is continued again. These are the incentives given in order to encourage scheduled caste and scheduled tribe students to farewell in public examinations and to create healthy competition among students. These are awarded to students who score more than 60 per cent marks in annual examinations at Rs. 100 per annum for high school students.

Under centrally sponsored schemes the children of those engaged in unclean occupations, like slaying, tanning, scavenging of dry latrine etc., are admitted to the government hostels with a view to provide good education. These students are sanctioned scholarships at Rs. 200 to Rs. 250 per month and the boarding charges and other expenses are met out of this amount.

Prize money is being awarded to the scheduled caste/scheduled tribe students who secure first class in 1st attempt in public examinations. An amount of Rs. 500 is given for the students who secure first class in the SSLC examination.

In order to avoid drop-out of students from the schools, a number of hostels are set up. The students in these hostels are provided with books, stationery, dresses and other requisites in addition to free boarding and lodging benefits.

Apart from the Government pre-matric hostels, voluntary agencies are also encouraged to run hostels for pre-matric SC/ST students by sanctioning grant-in-aid. The students are sanctioned Rs. 100 on par with the students of government hostels.

In addition to the above facilities and scholarships exclusively for SC/STs, there are hostel and scholarship facilities for backward classes welfare through the Department of Backward Classes, (ii) other scholarships like defence scholarship, merit scholarship, and (iii) concession in examination fee for special group students (economically weaker sections).

Number of secondary schools in the State has increased from 2002 (which include incomplete schools i.e., schools not having all the three standards) in 1970-71 to 2688 in 1980-81. The enrolment has increased from 0.454 million in 1970-71 to 0.732 million in 1980-81 with an annual growth rate of 4.4 percent. Although there is an expansion in the educational facilities at the secondary level less than 30 percent of the individuals in proportion to the population of the age group 14 to 17 are benefited by the secondary education system in the State. The proportion of enrolment of girls (about 17 percent) is very much less than the proportion of the enrolment of boys (about 33 percent with reference to the age group).

Taking into consideration the proportion of girls to the total enrolled in the secondary schools an increase in the growth rate (5.8 percent per annum) is seen among girls than boys (4.6 percent per annum).

Another important factor in the expansion of facilities is the growth in number of teachers working in secondary schools. It has increased from 21,400 (67.5 percent trained) in 1970-71 to 29,633 (86.0 percent trained) in 1979-80. Expenditure on secondary education has also increased from 102.38 million in 1970-71 to 245.7 million in the year 1979-80 with a corresponding increase in cost/pupil from Rs.188.65 to 333.37.

Thus, it can be observed that secondary education has drawn the attention of planners, administrators and the public right from the year 1835 in India. There are attempts made to expand the facilities for secondary schooling. Quantitative expansion has taken place in terms of number of schools, teachers, pupils and expenditure on secondary education.

6

Higher Education

There has been a phenomenal proliferation of University and Higher Education in the country since Independence. At the dawn of Independence there were only 20 universities and 591 colleges, while up to November 1998, the number of universities has increased to 182 and the number of institutions deemed to be universities was 40 besides four institutions established under State Legislature Act. The Pay Review Committee set up by the UGC under the chairmanship of Prof. R.P. Rastogi, former Vice- Chancellor, Banaras Hindu University submitted its report on 28 May 1997. After taking into consideration the recommendations made by the Committee, comments of the UGC, representations received from various quarters and the outcome of the wide-ranging discussions, the government announced revised pay scales and other conditions of service of university and college teachers on 27.7.98 and with further modifications on 6.11.98. Consequently the UGC finalised and notified the scheme of revised scales and service conditions on 24 December 1998. The changed pay structure and conditions of services of teachers are aimed at attracting talents to teaching in University and Colleges, awarding merits and promoting excellence in the profession. The State Governments have also been requested to adopt these scales for their university and college teachers. For this purpose the Centre has agreed to provide assistance to the extent of 80 per cent of the

additional expenditure involved, for a period of five years.

The Government of India constituted a Task Force under the Chairmanship of Prof. Amrik Singh, former Vice-Chancellor of Punjabi University, Patiala to examine the relevant provisions of the UGC Act with a view to suggest amendments in order to provide suitable safeguards against the incidence of fake universities and to empower the Commission to cope with the emerging challenges with confidence and to strengthen and restructure the Commission. The Task Force deliberated for over four months and submitted its report on 15 February 1999. The important recommendations of the Task Force are (i) provision of five whole-time members in addition to the Chairperson; (ii) increase in the number of members to 15 and of the nominated category, at least one-third should be women; (iii) suitable punishment including a term of imprisonment fine ranging between one lakh and ten lakh rupees for contravening Sections 22 and 23 of the Act; (iv) opportunity for establishment of private or self-financing universities in the country, subject to observance of rules made by the Government for the establishment of such universities; and (v) the recognition of universities or institutions which may confer degrees including the operation of foreign universities /institutions in the country for running their courses and programme of studies.

India participated in the World Conference on Higher Education convened by UNESCO, in Paris, between 5-9 October 1998 with a high level delegation led by the Minister for Human Resource Development. The conference celebrated upon the needs and challenges of the higher education in the twenty-first century, "Vision and Action". The Indian delegation made significant contributions to the World Declaration by

suggesting modifications and amendments, most of which were accepted; one such which received big applause was the world leaders of higher education reads as under:

Ultimately, higher education should aim at the creation of a new society-nonviolent and non-exploitative-consisting of highly cultivated, motivated and integrated individuals, inspired by love for humanity and guided by wisdom.

The rapporteur of the conference observed that India's amendment was 'too beautiful to be rejected'.

The University Grants Commission (UGC), an apex body in the field of higher education is responsible for coordination, determination and maintenance of standards in higher education. It advises the Central and State Governments on the measures necessary for the improvement of university education besides framing regulations on various aspects of higher education. It also determines disbursement of funds for maintenance and development of Central/State Universities, and some colleges which qualify for such assistance. Some of the major thrust areas pursued by the UGC during the year under report are discussed below.

The Commission's Policy for development of undergraduate and post-graduate education in the colleges during the Ninth Plan period will have the following main aims/objectives:

- Improvement of standards and quality of education.
- Removal of social disparities and regional imbalances in higher educational facilities. Restructuring of courses including developing career thrust in the courses.
- Grant of autonomous status to qualifying colleges.

To achieve these objectives, the Commission will provide

assistance to the colleges which fulfil the minimum eligibility conditions and have the necessary viability and potential and are striving for better standards. During the Ninth Plan, the UGC has launched many new schemes under the broad headings of (a) Relevance and Quality, (b) Access and Equity, (c) Extra Moral/Adult, Continuing Education and Outreach and (d) Management of Education and Resource Mobilisation. The Pay Review Committee submitted its report to the Commission on 28 May 1997. The report was sent to the Universities, Teachers' Associations and State Education Secretaries for higher education. The Commission had wide ranging discussions on the recommendations of the Pay Review Committee.

The UGC is finalising its notification on qualification and service conditions based on the Pay Committee Report in consultation with the MHRD.

The Commission has been striving to develop human resources and towards this end it provides assistance for various programmes which enable teachers and researchers to upgrade professional competence and keep abreast of the latest developments in their disciplines. Assistance for various types of Scholarships and Fellowships is provided to achieve this objective. Junior Research Fellowship is awarded to those research scholars who have qualified in the national level tests conducted by the UGC, CSIR, GATE, etc. Teachers in universities and colleges are given an opportunity to pursue research for a brief period of time without having to undertake full teaching responsibilities. During the year under report, the Commission continued the scheme of Visiting Faculty in the universities so as to provide teaching/research assignments outside Kashmir to the teachers from Kashmir University and its affiliated colleges due to disturbed conditions there.

Courses like Super-conductivity, Atmospheric Science, Environmental Education, Computer Application, etc. are included under this scheme. The total number of universities supported under the Super-conductivity programme up to November 1998, was 35. It is supporting seven universities under the Atmospheric science programme. Courses in the emerging areas like computer application, functional Hindi, biotechnology, environment education, energy education, electronics, futurology, business administration, communication and remote sensing were being reviewed during the year under report.

The scheme aims at providing a framework for assistance to a limited number of innovative projects, not covered by other UGC schemes, within the available resources of the UGC. Some of the innovative programmes include Cognitive Science, Mathematical Modelling and Designing through Computer graphics, Development of Microscale Experiments in Chemistry, setting up of Human Rights department in a university, development of Terracotta mural, etc.

The two programmes, viz. Courses in Emerging Areas and Innovative Programmes were integrated during the year and named Innovative Programmes for implementation during the Ninth Plan period. The Superconductivity R and D programme and the Atmospheric Science Programme are also now part of the Innovative Programmes.

The Commission is providing assistance to centres identified as Area Study Centres for undertaking studies relating to problems and culture of a given area and developing interdisciplinary research and teaching within a comparative framework. The focus is on such countries and regions with which India has had close and direct contact. There were 20 such centres being funded in 1998-99.

universities. The UGC launched the scheme of Career Orientation of Education at the first degree level in the universities and colleges in 1994-95, in conformity with the National Policy on Education. Under the scheme, universities/ colleges would introduce one to three vocational courses in 35 subjects identified by the Core Committee. There are inbuilt training programmes for equipping teachers of the respective institutions for teaching the vocational subjects which are arranged for them through identified nodal institutions. The UGC has identified areas to cater to the needs of under-developed and rural sectors specially women, tribal and hilly regions.

The UGC has panels of experts to advise it on measures to enhance the quality of teaching and research in various subjects, to prepare status reports regarding research and teaching facilities available in the universities, to indicate thrust areas, and to advise the Commission on other relevant matters.

The recommendations of these panels contribute to updating and modernising courses and introducing new dimensions in teaching and research. There are 28 subject panels in various disciplines of Science, Humanities and Social Sciences. A major task taken up by these panels during the year was to revise the syllabus for the NET examination.

The concept of autonomous colleges is aimed at providing academic freedom for potential colleges by way of designing their curricula, evolving new methods of teaching, research and learning, framing own rules for admission, prescribing own courses of study and conduct of examinations. Under the scheme of autonomous colleges, a college declared autonomous by its affiliating university is fully accountable for the content and quality of education it imparts. Such a college is also responsible

for setting up its own examination papers and for the conduct of examinations. The college evaluates the students for the award of degrees which will be accepted by the parent university. Up to November 1998, 123 colleges were functioning as autonomous colleges spread over eight States, viz. Tamil Nadu, Andhra Pradesh, Madhya Pradesh, Orissa, Uttar Pradesh, Gujarat, Maharashtra and Himachal Pradesh.

During the year, the Commission conducted qualifying test for determining the eligibility for lecturership and for award of Junior Research Fellowship in Humanities and Social Sciences. Similar test in science subjects was conducted jointly by the UGC and the CSIR.

Under the Academic Staff Orientation Scheme for orientation of newly recruited and in-service college and university lecturers, the 45 Academic Staff Colleges identified by the Commission organised orientation programmes for new teachers and refresher courses for in-service teachers.

The Commission provided grants for setting up computer centres in 125 universities up to November 1998. Also, assistance was provided for upgradation of computer facilities in the computer centres of various universities.

In addition, the Commission provided assistance to 3,137 colleges up to November 1998 for installing computer facilities. Universities were also assisted by the UGC for introducing Computer Application paper at PG level in all subjects wherever there was relevant need for it. As many as 13 universities were assisted under the scheme up to November 1998.

The UGC provides financial assistance to the universities /institutions for their Engineering and Technology Departments to enable them to carry out

various programmes of higher education and research. Assistance was provided to 11 Technological Universities and 25 State/ Central/ Deemed to be Universities. A new scheme 'Technology for Women' in women universities was introduced during 1998-99 for providing financial assistance for introduction of under-graduate courses in Engineering and Technology. Under the scheme, assistance would be provided for recurring and non-recurring items for a period of five years from the date of implementation of the course. To begin with, five women universities have been identified under the scheme during the Ninth Plan.

One hundred sixty-five departments have been assisted under the scheme of strengthening Infrastructure in Science and Technology Education (COSIST) and research till November 1998. Assistance under this programme is a one-time input. Departments supported under COSIST have been given functional autonomy. The infrastructural facilities extended through COSIST support have attracted additional funds not only from funding agencies in India but also from abroad and have improved teaching instructions both at the post-graduate and research level by enhancing the quality of teaching, particularly the experimental part of the courses.

The UGC assists a large number of centres as national facilities. There are six Inter University Centres and 11 other Centres as national facilities/ Information Centres assisted by the UGC. The Inter-University Centres are namely Nuclear Science Centre, Delhi, Inter-University Centre for Astronomy and Astro-physics, Pune, Inter-University Consortium for DAE Facilities, Indore, National Assessment and Accreditation Council, Bangalore, Information and Library Network (INFLIBNET), Ahmedabad and Consortium of Educational Communication, New Delhi.

Education International (EI), a commercial organisation, has been set up by the MHRD and the UGC under the overall supervision of CEC. EI has a mandate to promote and sell educational programmes available with CEC, IGNOU, NCERT and NOS in the international market. It also markets CEC programmes nationwide.

The guidelines for the scheme of Adult and Continuing Education, Extension and Field Outreach activities were revised for the Ninth Plan period.

The Ninth Plan guidelines involve the following programmes:

- Vocational/ career -oriented programmes
- Equivalency programme
- Quality of life improvement programme
- Leadership and human resource development programme
- Social and citizenship role awareness programme
- Individual interest programme.

The Commission deputed university/college teachers to work with Bharat Gyan Vigyan Samithi on wholetime basis for nationwide literacy movement. Fifteen Teacher Fellowships have also been provided for this purpose. Population Education programme, assisted by the UGC, is implemented by the universities as part of the United Nations Population Fund (UNPF)-UGC project through the Population Education Resource Centres (PERCs).

In order to ensure effective implementation of reservation Policy for SCs and STs, the UGC provides assistance to universities/ deemed to be universities for the establishment of SC/ST Cells. The, Commission under this scheme provides some positions of staff for running these Cells. There is also a scheme of 'Remedial Coaching for Scheduled Castes and Scheduled Tribes'

being implemented in universities and colleges which aims at improving the skills and linguistic proficiency of the students in various subjects and raising their level of comprehension in such subjects where quantitative techniques and laboratory work are involved.

A significant policy decision taken during the year was to create a Central Pool Database in the UGC for SC/ST candidates to consider their candidature for teaching positions in universities and colleges.

The Commission also continued to provide assistance to identified centres and cells (in universities and colleges, respectively) for conducting coaching classes for the educationally backward among minority communities for preparing them for competitive examinations other than the higher Civil Services as also classes for preparing students and providing training in shorthand/ typing, computer literacy, strengthening knowledge of English and regional languages, etc. Under the scheme of Junior Research Fellowship, the Commission has reserved some positions for SC/ST candidates out of the total number of such fellowships instituted for various universities. This is in addition to 50 fellowships which the Commission is directly awarding to SC/ST candidates.

Also, the Commission has reserved 40 Research Associateships for SCs and STs. In order to provide opportunity to SC/ST teachers in affiliated colleges, 50 teacher fellowships have been earmarked for them to improve their qualifications by doing M.Phil/Ph.D. Relaxation has also been made in the criteria for financial assistance to colleges having SC/ ST enrolment and to those located in the backward regions.

In order to oversee the implementation of the reservation policy in Central Universities, the Commission has appointed a Monitoring Committee

under the Chairmanship of the Secretary, UGC. A Standing Committee has also been constituted to consider various issues relating to the Reservation Policy for SC/ST candidates. The UGC has also been implementing the scheme of Integrated Education for Disabled Children with the initial financial support and sponsorship by the Department of Education, MHRD. Assistance is provided by the UGC to universities and colleges for setting up Centres and Cells for Women's Studies. The Centres/Cells are required to undertake research, develop curricula, and organise training and extension work in the areas of gender equity, economic self-reliance of women, girls' education, population issues, issues of human rights and social exploitation. These Centres/Cells are not expected to be like other conventional departments of the universities, as they are not required to run courses that lead to under-graduate or a post-graduate degree.

Project on information and library network was started by the UGC in the Seventh Plan with the aim of establishing a nationwide network of university libraries and information centres to organise library and information services based on sharing of library resources in the country and to promote academic interaction among academicians.

The Centre is now an Inter-University Centre of the UGC. Main activities of the Centre include computerisation of libraries, upgrading the skill of existing library staff to work in the computerised library environment, establishment of networking facilities, creation of academic databases and organisation of information services. Various software packages required for library management services have been developed at this Centre. It has also developed an Integrated Library Management Software (ILMS) for management of libraries in collaboration with DESIDOC for use in universities.

libraries. The Commission continued to provide assistance on cent per cent basis under Plan funds for the promotion of Gandhian, Buddhist and Nehru studies. The assistance is provided for setting up centres for these studies, conducting programmes to acquaint teachers and students with their philosophy and ideas and for the purchase of books and journals relating to these studies. It was also decided during the year to introduce the scheme of promotion of Ambedkar Studies. Proposals in this regard have been invited from universities. The Commission has also been providing assistance for value-oriented education in order to foster among students and teachers alike such values which are necessary for retaining national identity and sustaining a peaceful and harmonious society. As part of value-oriented education, the Commission is also promoting the programmes of National Integration in collaboration with the Association of Indian Universities.

Human rights scheme

The Commission has initiated the Human Rights Scheme and guidelines for the same were framed for introduction of Human Rights courses at the P.G. /Certificate levels and for organising seminars, symposia and workshops. These guidelines form part of the UGC Ninth Plan Approach to Promotion of Human Rights Education in Universities and Colleges, 1998.

The Commission approved the revised Ninth Plan guidelines to support universities for their resource mobilisation efforts. The main objectives of the scheme are to encourage universities to mobilise resources by participation/contribution of society in their development and to encourage and enhance the flow of resources coming from the society for university development.

The UGC has been pursuing the universities to take up extension activities in social and economic areas in their areas. Realising that the Universalisation of Elementary Education remains a national goal and challenge and the universities are in a pivotal situation to join the movement, the UGC initiated dialogues, during the year, with academicians, educationists, NGO representatives and Vice-Chancellor to bring out a policy strategy paper on university-elementary education linkages.

The UGC paper encourages university academic community to take up research, evaluation, training, development, etc. to support and strengthen the elementary school system in the areas of their operation. One such pilot initiative was arrived by the Mumbai University in a meeting taken by the Chairperson in Mumbai. The Department of Education has committed to support the universities' initiative by funds also under its various schemes meant for the NGO's programme for elementary education indicating for the training and research.

Jamia Millia Islamia (JMI) which had been functioning as a Deemed to be University since 1962 acquired the status of a Central University in December 1988. The University imparts education from the Nursery stage to Post-graduate and Doctorate levels. It has six Faculties and eight Centres (excluding Balak Mata Centres). There has been a constant increase in the number of books and research journals in Dr Zakir Hussain Library of the University. The number of books in the Library rose from 2,61,247 (1996-97) to 2,64,292 (1997-98).

The A.J. Kidwai Mass Communication Research Centre of JMI is not only providing training at Post-graduate level in Mass Communication but it is also

producing educational material on different educational aspects/ subjects for the UGC, INSAT programme. One live Video Conference was recorded between studios at the Centre and studios in Paris, France. A residential Management Development Programme for University Administrators instituted with the approval and financial support of the UGC provides necessary training to Deputy and Assistant Registrars and equivalent posts enabling them to be eligible for placement in the next grade. The Centre has organised four programmes in 1997-98 and successfully provided training to 84 administrators from all India universities and institutions of higher learning.

Visva-Bharati, an educational institution founded by Guru Rabindranath Tagore, was incorporated as a Central University by the Visva-Bharati Act, 1951. The University imparts education from the Primary School level to Post-Graduate and Doctorate levels. It has 11 Institutes—eight at Santiniketan and three at Sriniketan. As on 31 March 1998, there were 6,336 students on the rolls of the University including its School Sections. The total strength of teaching and non-teaching staff was 506 and 1586, respectively. A few new courses, namely, B.A. (Vocational), functional course in Hindi, two-year post graduate course in Biotechnology and two-year M.Sc. (Agriculture) course in Horticulture have been introduced. The library of the University has a total collection of 3,59,601 books and 2,592 journals. In addition, 2,89,128 books are housed at 12 Sectional Libraries of the University. Implementation of the Information and Library Network programme started in January 1998 is in progress.

While the major focus of development was rightly pointed out towards modernisation of both academic institutions and administrative management, rural segment of Visva-Bharati, i.e. Sriniketan has been taken

up with some priority with creation of CAREER (Centre for Advanced Rural Education, Extension and Research) and CSV (Centre for Science in Villages). The avenue for exploring the potential strength of the adjoining villages has been extended enormously. With the establishment of Nirman Bhavan (Building Centre), a project under the sponsorship of HUDCO for creating facilities in the housing technology in the rural area, with a possibility of replication, tremendous breakthrough is in the offing.

Aligarh Muslim University (AMU), established in 1920 as a Central University, is one of the premier fully residential academic institutions of the country. The University has 92 Departments/Institutions/Centres grouped under 11 Faculties. The University also maintains four Hospitals, six Colleges (including Medical, Dental and Engineering Colleges), two Polytechnics and eight Schools. Admissions to BDS course in Dental College established in 1997-98 have been made during the current academic session, viz. 1998-99.

The University also offers six diploma courses exclusively for women, in the fields of Electronics Engineering, Electronics (TV Technology), Computer Engineering, Costume Design and Garment Technology, Office Assistantship and Secretariat Practice, and General Nursing and Midwifery. Seven new courses namely, B.A./LL.B (five-year integrated course), M.A. (Human Rights), P.G. Diploma (Human Rights), Bachelor of Fine Arts, Master of Fine Arts, B.A. (Hons.) in Communicative English and Master of Journalism and Mass Communication were introduced in the current session.

During the year under report, the University has on its roll a total of 18,562 students (including school strength). The total strength of teaching staff of AMU is 1,457 and that of non-teaching staff 5,899.

Each Department of the University has a Seminar Library for PG and Research Students. Colleges like J.N. Medical College, A.K. Tibbiya College, Z.H. College of Engineering and Technology and Women's College have separate libraries. Academic Staff College of AMU has organised three Orientation Programmes, nine subject Refresher Courses and three Induction Training Programmes (sponsored by the All India Council for Technical Education). In addition, eight Programmes/Courses are planned to be organised during the remaining part of the current academic session.

With a view to promoting sports and allied activities the University maintains ten clubs. namely, Riding Club, Hockey Club, Tennis Club, Hiking and Mountaineering Club, Swimming Club, Athletic Club, Cricket Club, Football Club, Gymkhana Club and Gymnasium Club. AMU is the only University in India which maintains (a) a Riding Club and (b) a covered swimming pool.

Assam University, Silchar was established on 21.1.1994. It is a teaching-cum-affiliating University with its jurisdiction over the districts of Cachar, Karimganj, Karhi, Anglong and Hailakandi in the State of Assam. The University has granted affiliation to 53 colleges. The University has all its departments and offices at Dorgakona where the Government of Assam had allotted 600 acres of land. The University has 24 Departments under 8 schools of studies and in addition, it has 3 centres of studies. The total number of faculty members is 101. The University library has 32,400 volumes and has a subscription of 300 National and International journals. The University library is fully computerised.

Babasaheb Bhimrao Ambedkar University, Lucknow was established in 1994. The University was notified as a Central University on 10 January 1996. It aims to provide instructional and research facilities in new and frontier

areas of learning and to launch academic programmes in these areas. The University has set up three schools and three centres: School of Ambedkar Studies, School for Information Science and Technology and School for Environmental Studies and Centre for Rural Technology, Centre for Vocational Studies and Centre for Human Rights. The academic programmes in these Schools and Centres have started with a faculty strength of 13 members and 118 students including 54 SC/ST candidates.

Banaras Hindu University (BHU) came into existence in 1916 as a teaching and residential University. The University consists of three Institutions-Institute of Medical Sciences, Institute of Technology and Institute of Agricultural Sciences-and 14 Faculties with 121 academic departments and four Interdisciplinary Schools. The University also maintains a constituent Mahila Mahavidyalaya and three School level institutions. Four colleges in the city are admitted to its privileges. It also has a 1000-bedded Modern/Ayurvedic Medicine Hospital. The University has 14,812 students on its rolls. The strength of its teaching and non-teaching staff is 1,162 and 7,088, respectively. During the current academic session, the University established a Centre for Advanced Studies in Sciences. The University also created the Malaya Centre for Peace Research as an Inter-disciplinary Centre under the Faculty of Social Sciences.

Seven endowment funds have been instituted by the University for various scholarships/ medals/cash prizes.

The University of Delhi is a premier university of the country which is known for its high standards in teaching and research and attracts a large number of students not only from all over India but also from several other countries. Established in February 1922 as a unitary and residential university with a nucleus of three

colleges, two faculties and about 750 students, it has grown, over the years, into one of the largest universities in the country. At present it has 14 faculties, 82 teaching departments and 78 colleges spread all over Delhi. There are about 2,49,400 students presently enrolled in the University. About 1,31,400 of the students are enrolled in non-formal education programmes offered by the School of Correspondence and Continuing Education, Non-Collegiate Women Education Board and the External Candidates Cell. There are about 337 Professors, 213 Readers, 143 Lecturers and 26 Research Associates making the total strength of 719 of the Faculty of the University.

In a special convocation on 13 December 1998, the University conferred Honorary degrees to various eminent persons: Dr Abdul Kalam, Dr R.A. Mashalkar, Dr M.S. Valiathan, Dr John Rawis, Dr Ikeda, Dr Edward Said, Dr Sarup Singh, Dr M.N. Srinivas, Dr Amartya Sen, Sardar Raunaq Singh, Sint. Gangubai Hangal, Ustad Amjad Ali Khan and Prof. K.N. Raj. The University has also accepted in principle, institution of about 13 new courses in various fields. The University has approved the proposal for the institution of scholarships, viz. Dr Virendra B. Mahesh Fellowship and Nupur Mathur Memorial Scholarship in Business Economics.

The University of Hyderabad, established by an Act of Parliament in 1974, is a premier institution of post-graduate teaching and research in the country. The academic activities of the University are undertaken through its eight Schools of Studies. Besides, the Centre for Distance Education of the University offers post-graduate diploma in five disciplines.

The University has a faculty strength of 215 consisting of 69 Professors, 86 Readers and 60 Lecturers during the year under report.

The faculty of the University has obtained research support from several funding agencies. Over 105 such research projects are currently under investigation by the faculty. Some projects for investigation by the faculty have been sponsored by foreign agencies such as Naval Research of USA, Volkswagen Foundation of Germany and Rockefeller Foundation of USA. Several faculty members have won National and International awards. The University has also entered into a few Memoranda, of Understanding with local industrialists. Several eminent scholars from India and abroad occupied the two prestigious chairs named after Shri Jawaharlal Nehru and Dr Sarvapalli Radhakrishnan.

Jawaharlal Nehru University (JNU) came into existence in 1969. It is primarily concerned with Post-graduate Education and Research. The University has seven Schools consisting of 24 Centres of Studies. In addition, it has a separate Centre for Bio-Technology. The strength of its teaching and non-teaching staff is 370 and 1,350, respectively. The total enrolment in the University was 3,892 students with adequate representation of SCs, STs and other backward classes.

The Faculty members of the JNU produced 400 publications which include 55 books, contributed 10 chapters to books and 235 research articles in various national and international journals of repute. The Faculty has at present 174 on-going research projects sponsored by various funding agencies. A number of distinguished faculty members received honours/awards from various national and international organisations..

The University library acquired 5,321 volumes of various bound periodicals and newspapers in the year under report. The total collection of books and periodicals now stands at 6,67,993 volumes.

The JNU Academic Staff College set up by the UGC to impart refresher courses and orientation training to college and university teachers for their academic development and growth and organised 13 refresher courses during this period.

Indira Gandhi National Open University (IGNOU) was established in 1985 for introduction and promotion of Open University and distance education system in the educational pattern of the country and for the coordination and the determination of standards in such systems. The major objectives of the IGNOU include widening of access to higher education by providing opportunities to large segments of the population, particularly the disadvantaged groups, organising programmes of continuing education and initiating special programmes of higher education for specific target groups like women, people living in backward regions, hilly areas, etc.

The University is offering 43 programmes. During 1998, the total number of students registered for various programmes was 1,63,000. The network of Students Supports Services in 1998 consist of 19 Regional Centres and 346 Study Centres. Three more Regional Centres are likely to be established during 1998-99 at Srinagar Valley, Dehradun and Chandigarh or Jalandhar.

The telecast of IGNOU programmes on the Doordarshan Network continued on every Monday, Wednesday and Friday up to September 1998. From October 1998 onwards IGNOU started telecast of its programmes for half an hour a day for six days from Monday to Saturday.

As part of its mandate for training of distance educational personnel, Staff Training and Research Institute in Distance Education (STRIDE) continued to organise workshops.

The IGNOU Act was amended in 1997 to allow the university to set up its Study Centre, outside the country with the approval of the Visitor. The Distance Education Council (DEC) will assume the responsibility for development of correspondence education programmes offered by the traditional universities during the Ninth Plan. In the initial phase, the effort will be to transform the programmes into mainstream of distance education programmes. The DEC has finalised guidelines for providing development support to State Open Universities as well as the Directorates of Correspondence Education in the traditional universities.

Nagaland University was established on 6 September 1994 by an Act of Parliament with headquarters at Lumami. It is an affiliating University with its jurisdiction over the whole of the State of Nagaland. Presently, the University is functioning from its campuses in Kohima, Lumami and Medziphema (School of Agricultural Sciences and Rural Development (SASRD)). The University presently has 25 departments located in three campuses with 4 schools of studies. The total number of faculty members is 109. The University has 39 colleges affiliated to it. The University library, Kohima has 27,000 volumes and 139 periodicals/journals. The SASRD Library Campus has 18,000 volumes.

The North-Eastern Hill university was established in 1973 at Shillong. It has a campus in Aizwal and a Centre in Tura. The University has 31 Post-graduate Departments and four Centres of Studies under its six Schools of Studies and an Under-graduate College. There are 58 Under-graduate Colleges and eight professional course colleges and North-Eastern Regional Institute of Science and Technology (NERIST) affiliated to it. The University also has Regional Sophisticated Instrumentation Centre (RSIC).

The University has an enrolment of 693 Post-graduate students and 65 research scholars, 19,716 Under-graduate students, and 2,274 professional course students during the year 1998-99. The University Central Library has a collection of 1,61,737 books, 3,60,028 bound periodicals and a subscription of 316 foreign and 366 Indian journals. The Mizoram campus library has a total of 2,621 books and a subscription of 66 journals. The University has conducted various seminars/ conferences on such subjects as 'Role of Microbes in Environmental Protection', 'DNA Damage Repair and Radiation Calcinogenesis', and 'Anthropology and Allied Discipline in the North-East Region'.

Pondicherry University, established in 1985 as a teaching-cum-affiliating university, has its jurisdiction over the Union Territory of Pondicherry and Andaman and Nicobar Islands. As enshrined in the Act, Sri Aurobindo School of Eastern and Western Thought, Sri Subramaniya Bharathi School of Tamil Language and Literature have been established and given special attention. Pondicherry being the window of French Culture, French Studies is also given its due importance.

The University has six Schools, 16 Departments and 12 Centres and offers one Certificate, two P.G. Diploma and 27 Postgraduate courses, 17 M.Phil, 22 doctoral programmes and five-year integrated Master's Degree programme in two Aisciplines. The University has 22 affiliated institutions of which 13 are located in Pondicherry, three in Karaikal, two in Mahe, one in Yanam and three in Andaman and Nicobar Islands. The total students strength in these institutions is 16,374. The students enrolment in the University is 1257. The University has a faculty strength of 138 experienced teachers, 37 Professors, 42 Readers and 59 Lecturers. There are 566 non-teaching staff. There are five hostels, out of 650 hostel students, 208 are women and 120 are

SC/ST students. An innovative credit-based PG programme has been introduced since 1992-93 and this has attracted students from all over India. The credit system enables the students to construct their own curriculum and to complete the PG programme at their own pace. It also helps to develop academic networking with other universities institutions.

Pondicherry University had established the Centre for Pollution Control and Biowaste Energy in 1991 to give a renewed thrust to the University's efforts in providing advanced training, research, and consultancy facilities for regional as well as national benefit. During 1997-98 the Centre was further strengthened in terms of laboratory infrastructure and computational facilities which were procured mainly with the funds generated by the Centre through its industrial consultancy and R&D projects. As a consequence the Centre has taken rapid strides forward and is already beginning to be recognised as one of the foremost institutions of its type in India.

The University entered into a Memorandum of Understanding with the University of Rennes-2 (France); Poitiers University, France; University of Technology, Australia; and Marne la Vallee University, France in addition to five MOUs already entered with the IGNOU.

The Special Cell started in 1987 took all measures for the welfare of the SC/ST and physically handicapped students. Due reservations for SC/ST and physically handicapped candidates were given in admission as per Government of India orders. Out of the students admitted in the first year nearly 32 per cent teachers were women students. Of the 606 students on roll 84 were SC/ST. The number of women students on roll is 195.

Maulana Azad National Urdu University was established at Hyderabad mainly to promote and develop Urdu language and to impart vocational and technical

education in Urdu medium through conventional and distance education system. The University Act was passed by the Parliament in 1997 and the University came into existence on 9 January 1998 with the enforcement of the Act. Prof. Mohd. Shamim Jairajpuri and Dr M.S. Siddiqi has been appointed as the first Vice-Chancellor and the first Registrar of the University, respectively, by the President of India in his capacity as the Visitor of the University. The first Executive Council of the University has also been constituted by the Visitor. As a gesture the Government of Andhra Pradesh has allotted 200 acres of land for the University free of cost.

The administrative office of the University has been set up at Hyderabad. Regional offices at Delhi, Patna and Bangalore have also been set up. The University organised two symposia to formulate its developmental proposal/layout. During the current academic session, the University has started B.A. course in Urdu medium through distance education mode.

Mahatma Gandhi Antarrashtriya Hindi Vishwavidyalaya Act, 1996 seeking establish the Mahatma Gandhi antarrashtriya Hindi Vishwavidyalaya at Wardha was passed by the Parliament in December 1996. The University has come into existence with effect from 29 December 1997. Dr Ashok Vajpeyi has been appointed as the first Vice-Chancellor by the President of India as the Visitor of the University.

Though the University will be located at Wardha, given the international character of the institution and initial preparatory responsibilities, the Vice-Chancellor shall have to function from Delhi for some time during the preparatory phase. The first Executive Council of the University has also been constituted by the President in his capacity as Visitor of the University. The Government of Maharashtra has agreed to allocate land for the University at Wardha.

Tezpur University is a non-affiliated unitary Central University set up in 1994. Its aim is to offer employment-oriented and interdisciplinary courses, mostly at post-graduate level, to meet the local and regional aspirations and the developmental needs of the region. The University has been offering courses and promoting research in emerging areas in Science and Technology. The total number of students enrolled during the year is 544. The total number of teachers is 67.

The University has 11 Departments under four Schools of Studies and six Centres of Studies. The first convocation of the University was held on 10 November 1998 wherein students of six Departments were awarded Post-graduate Degrees and Diplomas. Hon'ble President of India, the Visitor of the University, was the chief guest to the convocation. An International Conference on Disaster Management was held in April 1998.

The Indian Institute of Advanced Study (IIAS), set up in 1965, aims at free and creative enquiry into the fundamental themes and problems of life and thought. It is a residential centre for research and encourages promotion of creative thoughts in selected subjects like Humanities, Indian Culture, Comparative Religion, Social Sciences and Natural Sciences and in other areas as the Institute may from time to time decide. The Institute provides facilities for advanced consultation and collaboration besides exhaustive library and documentation facilities.

The IIAS awards fellowships for advanced research every year. The Institute holds three seminars each year on themes of national significance when outstanding scholars and experts are invited to join the members of the academic community of the Institute to examine theoretical issues and contemporary problems. Visiting Professors, both from India and abroad, are invited from time to time to deliver a series of lectures at the Institute.

Indian Council of Philosophical Research (ICPR) was set up by the Government to promote research in philosophy and allied disciplines. In order to achieve its aims and objects, the Council awards fellowships, organises seminars, conferences, workshops and refresher courses, provides financial support to organise seminars/workshops, travel grant to scholars to present their papers at conferences/ seminars held abroad, sponsors major and minor projects and brings out publications and a triannual journal *Journal of Indian Council of Philosophical Research*. The ICPR offered four senior fellowships, 11 general fellowships, 17 junior research fellowships, four residual fellowships and one short-term fellowship during the year under report (up to November 1998).

The Indian Council of Historical Research (ICHR) was established in 1972 with a view to providing funds for historical research and to foster objective and scientific study of history. It has been promoting historical research including the history of art, literature and philosophy and allied subjects such as archaeology, numismatic, epigraphy, and the historical study of manuscripts.

The Council awards fellowships, study-cum-travel grants and publication subsidies. It also endeavours to make available source material as well as result of historical research through an ambitious publication programme. It also brings out a journal *The Indian Historical Review* which includes interpretative papers and reviews. It organises seminars and academic conferences and gives financial assistance for travel within and outside the country for conducting historical research. The Council also maintains a large and continuously expanding library for the use of historians and researchers. Documentation services are also provided.

The most important function of the ICHR is to provide assistance to scholars/institutions for research and publications. National Fellowships are awarded to eminent historians who wish to work on projects of special historical importance.

The Indian Council of Social Science Research (ICSSR) was established in 1969 with the objective to support and sponsor purposive and meaningful research in social sciences in India. The Council provides maintenance and development grants to 27 research institutes spread over the entire country. The Council has also established six Regional Centres for identification and development of talent through various programmes. During 1998-99, 130 new research projects are proposed to be sanctioned and 90 reports to be received for projects sanctioned earlier.

The Council will continue its Cultural Exchange Programmes (CEPs) with Russia, France, the Netherlands, China, South Korea and Vietnam in addition to new CEPs with Japan and SAARC. The Council has been actively participating in the activities of international organisations like ISSC, UNESCO, AASSREC, etc.

Indo-Dutch is one of the important bilateral programmes being implemented by the ICSSR in India and the Netherlands Organisation for International Cooperation in Higher Education in the Netherlands. The collaborative programme has entered the fourth phase. Funding of the project will be continuing during 1999-2000.

The National Social Service Documentation Centre (NASSDOC) provides research information services to social scientists and researchers. It is currently involved in the development of a National Information Network in Social Sciences.

The data archives of the Council has been developed as a repository of primary data generated through research studies supported by the Council. It is also proposed to provide guidance and consultancy services in data processing to 60 scholars through 11 institutions. A major new initiative proposed in the Ninth Plan is to set up a network of socio-economic data bankers.

The ICSSR has been carrying out surveys of research in different social science disciplines. The first series of surveys in all the disciplines have been published. The Council is updating these surveys every five years.

Dr Zakir Hussain Memorial College Trust, Delhi was established In 1973 to take over the responsibility of the management and maintenance of Zakir Hussain College (formerly Delhi College), which is one of the constituents of the University of Delhi. The maintenance expenditure of the college is shared between the UGC and the Trust in the ratio of 95:5. In addition, the UGC provides development grant to the College. The matching contribution of such development expenditure is required to be made by the Trust. Since the Trust has no resources of its own, grants are provided by the Department of Education, MHRD for meeting the above expenditure. Financial assistance is also provided for meeting the administrative expenditure of the Trust.

The Association of Indian Universities (AIU) is a voluntary organisation of Indian universities and is registered under the Societies Registration Act. It is also a forum for university administrators and academics to come together to exchange views and to discuss matters of common concern. It acts as a bureau of information in Higher Education and brings out a number of useful publications, research papers and a weekly journal known as *University News*.

The AIU is substantially financed from the annual subscription of the member universities. The Government of India 'sanctions grants for meeting a part of the maintenance and development expenditure including the Research Cell set up to undertake research activities concerning the university system. The Research Cell undertakes various activities including research studies, workshops, training programmes, question banks, tournament and databases, etc. The Evaluation Division of the AIU continued its work related to the grant of equivalence to foreign degrees and the recognition of institutions in India. The Students Information Services Division continued to serve the students, academics, parents, etc. by providing them information on the status of Indian higher education institutions and on the courses offered through regular/correspondence study by Indian universities and other institutions recognised by AICTE/ Government agencies.

The scheme of financial assistance to all India Institute of Higher Education has been continuing from one plan period to the next plan period. Under the scheme, the MHRD has been providing financial assistance to some voluntary organisations / educational institutions. Assistance under the scheme is provided to institutions which are outside the university system and which are engaged in programme of innovative character. The institutions which have been receiving assistance from the Central Government are:

- Sri Aurobindo International Institute of Educational Research, Auroville, Tamil Nadu
- Sri Aurobindo International Centre of Education, Pondicherry
- Lok Bharati, Sanosra, Gujarat
- Mitraniketan, Vellanad, Kerala

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provided under the plan scheme, continuance of assistance from one plan period to the next plan period has to be decided at the end of every plan. In order to examine and to recommend the nature and quantum of assistance to be provided to these institutions during the Ninth Plan period, Visiting Committees were constituted by the MHRD to visit the institutions to make an on-the-spot assessment of their performance and to recommend nature and scope of future assistance during the Ninth Plan period.

The interest of foreigners in Higher Education is reflected in the large number of foreign scholars coming to India for doing research. Besides the research projects sponsored by the American Institute of Indian Studies, the United States Educational Foundation in India and the Shastri Indo-Canadian Institute, large number of scholars come for doing research either on self-funding basis or scholarships from their countries/other sources. During 1998-99, the number of research projects approved by the Ministry of Human Resource Development is 373. The Government has approved a number of bilateral agreements between Indian universities and their counterparts abroad. There has been significant increase in the number of bilateral international conferences/ symposia/seminars/workshops in collaboration with foreign universities. During the year 19 proposals for seminars/symposia/international conferences were approved on a variety of subjects under the aegis of universities, autonomous Organisations and Institutions of higher learning. The Government also approved 14 proposals of foreign scholars as visiting lecturers /professors in Indian universities in the country.

The United States Educational Foundation in India (USEFI) was established in February 1950 under a

bilateral agreement as replaced by a new agreement in 1963 between the Government of India and the Government of United States of America to administer the Fullbright Educational Exchange Programme to promote mutual understanding between the people of the two countries by a wider exchange of knowledge and professional talents through educational contacts. During 1998-99, 21 visiting lecturers, 15 research scholars and 40 student professionals were given Fullbright grants ranging from 3 to 12 months. One grant was given to an Indian fellow under National Institute of Drug Abuse Programme of the Hubert H. Humphrey Fellowship. The USEFI also administers the East West Centre (EWC) grants by conducting workshops/seminars on various themes involving Indian scholars at many of the EWC Institutes.

The Foundation also administers research scholar grants, short-term group programmes for school/college teachers, workshops/seminars involving visiting American professors/eminent Indian faculty for Indian college/university teachers in various fields besides the regular exchange programme.

The American Institute of Indian Studies (AIIS), a consortium of about 50 major universities was established in 1960 with the approval of the Government of India to promote Indian studies, civilization and culture in the United States. The Institute awards Research and Language Fellowships. Five Group Projects were undertaken during the year under report. Five publications have also been brought out by the Institute. The Archives and Research Centre for Ethnomusicology continued its activities in computerising its library, field recordings and organising workshops.

The AIIS Centre for Art and Archaeology published a comprehensive Bibliography on Imperial Gupta. The

Institute has already published nine volumes of the Encyclopaedia of Indian Temple Architecture and work on more volumes is in progress. Considering the AIIS contribution to the academic world, the Board of Directors of Encyclopaedia, Britannica has established an Editorial Board to proceed further on the Encyclopaedia project. To celebrate the 50th year of India's Independence, the Institute brought out a volume entitled *Commemorating the 50th Anniversary of India's Independence: India's World's and US Scholars. 1947-97*.

A binational non-profit making organisation was established in 1968 by joint announcements of the Governments of India and Canada and signing a Memorandum of Understanding between the Government of India and the Shastri Indo-Canadian Institute for the operation of the Institute in India initially for a period of three years, which has been renewed from time to time. Action for renewal of agreement for a further period of five years, i.e. 1 April 1999 to 31 March 2004 is being initiated.

The India Studies Programme of the Institute funded by the MHRD provides fellowship to Canadian scholars and supplies Indian imprints to Canadian Universities. The Government of India has approved visit of 22 scholars during 1998-99 under this programme. The Canadian Studies Programme funded by the Foreign Affairs and International Trade, Canada offers fellowship to Indian scholars for research in Canada and also for visiting lecturerships for Canadian academics. It also supplies Canadian imprints to Indian universities. During 1998-99, 19 Indian scholars have been selected for the fellowship.

The CIDI-SICI Project (CSP) funded by the Canadian International Development Agency runs the partnership Programme, the journalism programme, the

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distinguished speaker programme and the summer programme in India. The partnership programme which proved to be a very popular component of the CSP has entered its second phase. The Institute is ready to start eleven partnership projects in the area of Development related to Environment, Gender, Social and Economic Reform and private sector development.

The Institute in its role as a mediator and catalyst in academic and non-academic collaborative initiatives between India and Canada was honoured by the Governor General of Canada on 31 March 1998 during his official visit to India.

The National Council of Rural Institutes (NCRI) was set up on 19 October 1995 at Hyderabad with the following aims and objectives to:

- i) promote rural higher education on the lines of Mahatma Gandhi's ideas on education so as to take up challenges of micro planning for transformation of rural areas,
- ii) consolidate network and develop institutions engaged in programmes of Gandhian Basic Education and Nai Talim;
- iii) encourage other educational institutions and voluntary agencies to develop in accordance with the Gandhian philosophy of education.

The NCRI is preparing an Action Plan for promotion/revival of existing rural institutes as also to encourage new initiatives. It has encouraged the setting up of Swami Ramanand Tirth Rural Institute at Pochampalli for which the State Government has transferred 17 acres of land and has agreed to provide 15 per cent of annual expenditure. The Council has decided to start Rural Institutes in various parts of the country, namely Andhra Pradesh, Orissa, Bihar, Madhya Pradesh, Maharashtra, North East India and two other states.

Computer literacy courses

Introductory computer literacy courses are believed to play a critical role in introducing college students to fundamental computer concepts and skills. Ideally, students completing such courses have sufficient computer literacy for effective use of computers, plus the ability to acquire more sophisticated computer skills in subsequent courses or the workplace. To ensure that all students have received similar exposure to essential computer skills and concepts, introductory courses typically assume that students have little or no relevant computer experience.

For some time, computer competency has been considered a prerequisite for success in many college programs and careers. Consequently, high schools and even elementary schools have introduced courses specifically designed to develop or enhance students' computer capabilities. Students are also much more likely to have access to personal computers at home. In sum, college-bound students are increasingly likely to possess a significant amount of computing experience.

Accordingly, students entering college today are expected to be more computer literate than their counterparts in years past. Therefore, if students "bring to class" the basic computer knowledge and skills regularly taught in introductory courses, then the novice-level training approach typically employed in such courses may not be appropriate. In fact, the course itself may be unnecessary. On the other hand, if computer experience acquired prior to matriculation does not encompass the basic computer skills necessary for effective computer use in college courses, students may become discouraged and even avoid computer use. Students lacking sound computer fundamentals may find it difficult to subsequently acquire more sophisticated computer skills. As collegiate programs increasingly

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involve computer-based content, the academic performance of "experienced but insufficiently prepared" students may suffer. Therefore, assumptions made regarding the linkage of prior computer experience to actual computer literacy should be examined with care. These assumptions have important implications for the scope and orientation of introductory computer literacy courses.

Previous research has provided limited and sometimes puzzling findings regarding the relationship of prior computer experience to computer literacy. For example, Brock et al. found that nearly any type of computer experience, especially video game experience, increased the computer literacy levels of incoming students to some degree. Surprisingly, however, exposure to computer information systems at the high school or community college level was found to have little significant impact on student computer literacy. In general, entering students failed to exhibit levels of computer literacy that were equivalent to students who had completed an introduction to management information systems (MIS) course. Brock et al. characterized these findings as preliminary and called for additional research into the relationship between computer experience and computer literacy.

In answering this call, we have taken what we suggest is a logical next step by including a measure of computer-dependent course performance in our research. However, a review of the literature in this research context revealed no studies employing actual measures of course performance. Researchers have been concerned with the relationship of factors such as attitudes about computers or computer exposure to computer literacy and the impact of attitudes on computer performance. No studies were apparent that examined the relationships among all three factors of interest: prior

computer experience, computer literacy, and computer-dependent course performance.

Our literature review also revealed considerable disagreement about the definition and measurement of computer literacy. For reasons discussed in subsequent sections of this article, we chose to operationalize computer literacy using a measure of computer self-efficacy (CSE) originally developed by Murphy, Coover, and Owen. Although subjective measures may be more vulnerable to certain types of error than objective measures, the CSE scale is a self-report measure of perceived computer literacy that has been demonstrated to be high in reliability and validity. Moreover, prior research has successfully employed the CSE scale as an informative indicator of computer skill.

Consequently, this study was designed to enhance our understanding of the relationship between prior computer experience and student perceptions of computer literacy (i.e., CSE), as well as the relationship of prior computer experience to computer-dependent course performance in an introductory MIS course. This study differs from prior research in several important ways. As mentioned, we employed a subjective measure of computer literacy based on the well-researched construct of self-efficacy. Second, changes in student perceptions of computer literacy were measured within subjects as opposed to between groups to control for variability because of individual differences. Finally, this study also employed an objective measure of computer-dependent course performance.

This article is organized as follows. Given the consistent research concern regarding the definition and measurement of computer literacy, the relationship of CSE to computer literacy is discussed first. Second, our research methodology is presented, including the study

sample, measures, procedures, and data analysis. Results and discussion follow. Conclusions, study limitations, and directions for future research complete the article.

CSE and computer literacy

A review of the educational computing literature reveals considerable frustration and little agreement about the definition of computer literacy. Rather than develop an original measure, we employed the CSE scale, a subjective measure of computer literacy that has been tested, validated, and described as high in reliability and validity. The CSE scale has been used as a subjective measure of computer literacy in similar computer training circumstances.

CSE has been defined as "a judgment of one's ability to use a computer". Prior research indicates that CSE is positively correlated with willingness to choose and participate in computer activities, expectations of success, persistence when faced with computer-related difficulties, and computer-related performance. In sum, CSE is an intuitively appealing construct that appears to capture the combined sense of computer competence and confidence, which in large part define the characteristics of individuals deemed to be computer literate.

Moreover, prior CSE research in other computer training settings has suggested interesting relationships among the variables of particular interest in this study. For example, actual experience with computers has been shown to enhance an individual's personal sense of self-efficacy with computers. However, a positive relationship between computer experience and computer performance is posited to occur only when that experience directly impacts computer self-efficacy. In other words, although an individual might have substantial computer experience, computer experience per se does not guarantee successful performance with a

computer. Such a finding is intuitive and is supported both by our practical experience as instructors of introductory MIS courses and by the results of a recent survey of students entering a midwestern U.S. university. Although incoming students are more likely to have computer experience and perceive themselves as computer literate, that experience is often narrow in scope and is not necessarily predictive of a desire to learn about or use computers.

CSE has the practical advantage of lending itself to measurement. Although previous CSE research has employed scales of varying length, it is most critical that the specific skills of interest be accurately and unambiguously identified. Consequently, we selected the CSE scale originally developed by Murphy et al. Those scale items most closely reflect the skills taught in introductory MIS courses. In addition to being successfully employed as a subjective measure of computer literacy in other research, the CSE scale has been successful in detecting changes in computer self-efficacy over time.

Any measure designed to capture computer literacy has weaknesses, serving at best as an approximation of an individual's actual computer literacy. The CSE measure employed in this study assesses self-perceptions of computer skills rather than the skills themselves. Perceptual measures may be subject to more error than comparable objective measures of computer literacy, but prior research has demonstrated a significant, positive correlation between the CSE scale employed here and an objective measure of similar skills. Bearing the limitations of subjective measures in mind, however, the insights offered by prior CSE research regarding the targeted variables here support the use of CSE as an appropriate and potentially enlightening subjective measure of computer literacy in this research context.

Method

Research subjects consisted of 98 undergraduate students enrolled in a required introduction to information systems course at a university in the midwestern United States. Although approximately 300 students enroll in the course each semester, the sample was limited to students in sections taught by the same instructor to avoid instructional method bias. Participation in the study was optional, and confidentiality was guaranteed. No students opted not to participate. Because data collection did require temporary identification of the subjects, data analysis was delayed until after grades were assigned.

An initial questionnaire was administered the first day of class, prior to any computer training. The questionnaire collected standard demographic data, as well as three separate measures of self-reported computer experience that have been associated with computer literacy in prior research: total years of computer experience (COMPEX), current average hours per week of computer use (COMPUSE), and the number of prior computer courses completed (COURSES). As mentioned, student perceptions of computer literacy were collected through the 35 item, 5-point Likert-type CSE scale. This scale was slightly modified to include skills associated with working in a networked environment, a change appropriate for this course. Students had to understand, distinguish between, and navigate among resources on their local workstation, LAN server, course Web server, and campus mainframe. Therefore, several items were added to the CSE scale to assess students' self-perceptions of their skills in such an environment. Aggregate scores on the scale, with a potential range of 35 to 175 points, were calculated, with a higher score indicating a higher level of CSE.

Course content and structure were typical of introductory MIS courses currently offered in business

schools. The course provided students an opportunity to develop or enhance their knowledge of and hands-on facility with appropriate computer hardware and software in a networked environment. A laboratory portion of the class was integrated with lecture sessions and provided at least 15 semester hours of hands-on experience with microcomputer applications, including operating systems, programming, spreadsheet analysis, and database management software.

The CSE scale was administered again the last regular day of class. In addition, an objective measure of computer-dependent course performance was obtained. The objective performance measure (PERFORMANCE) was the sum of the points earned on nine computer-based homework assignments given throughout the semester. Homework assignments required students to understand and apply an operating system, a spreadsheet, a third-generation programming language, and a relational database to solve various business-related problems. Each assignment generally required 2-4 hours to complete. The instructor who graded the assignments was unaware of student computer experience levels or CSE scores. Preliminary data analysis indicated no significant interactions or unexpected relationships among the demographic factors and the target research variables other than those of interest in the study. This may be attributable to the fact that the study sample pre-dominantly consisted of traditional students. Although the homogeneity of the sample limits the generalizability of study results, it did permit a less cluttered examination of the primary study variables. Basic correlation analysis and multiple regression were used to determine the significance and direction of the relationships among the study variables. At test analysis was used to detect changes in precourse and postcourse measures of computer self-efficacy.

Reported years of prior computer experience ranged from 0 to 14, $M = 2.6$ years, $SD = 2.83$. Average hours per week of computer use ranged from 0 to 50, $M = 5.95$, $SD = 8.03$, and the number of prior computer courses completed ranged from 0 to 11, with the average student indicating that he or she had taken at least one previous course.

Scores on the precourse measure of CSE ranged from 67 to 175, $M = 118.73$, $SD = 21.98$. By contrast, scores on postcourse CSE ranged from 116 to 175, $M = 153.60$, $SD = 14.97$. Only one student on the precourse CSE and three students on the postcourse CSE scored the maximum (175) points available, alleviating our concern about a possible ceiling effect. A large proportion of students scoring the maximum on the precourse CSE measure might indicate that the measure employed was inappropriate or that incoming students did indeed possess the computer skills normally imparted at the introductory course level. If most students had attained the maximum score on the postcourse measure, interpretation would have been more difficult.

As for the measure of performance, total scores on the computer-dependent course assignments ranged from 49.50 to 70, $M = 63.5$, $SD = 4.98$. The nature of these scores is discussed in more depth below.

Correlations among the study variables are presented in Table 1. As would be expected, the number of prior courses taken and years of prior computer experience are significantly and positively correlated, $r = .29$, $p < .01$. Interestingly, no significant relationship was found between prior coursework and current computer usage. Finally, all three measures of computer experience are significantly and positively correlated with the precourse CSE scores, $COMPUSE$, $r = .4864$, $P < .01$; $COMPEX$, $r = .3368$, $P < .01$; and $COURSES$, $r = .4472$, $P < .01$.

<.01. The results support the findings of Hill et al. (1987) that actual computer experience should enhance one's personal self-efficacy with computers and of other research that has found multiple types of computer exposure to be significantly related to student computer literacy levels.

Interestingly, all three computer experience measures are correlated with CSE, yet only CSE, $r = .3182$, $p < .01$, and COMPUSE, $r = .2727$, $p < .01$, are significantly related to PERFORMANCE (see Table 1). A multiple regression analysis was conducted to better understand the relationship of the three experience measures and CSE to PERFORMANCE. Both stepwise and hierarchical analyses confirmed the model shown in Table 2. Notably, none of the three measures of computer experience, whether entered individually or as a set in the supplementary hierarchical analysis, were significant predictors of PERFORMANCE. Table 2 demonstrates that precourse CSE, however, was significantly related to PERFORMANCE, $P < .05$. These results are consistent with prior CSE research findings that only experiences directly influencing personal self-efficacy beliefs are likely to impact performance.

In other words, although computer experience in general may contribute to perceived computer literacy, only those aspects of the experiences directly relevant to the development of the computer skills defined to constitute computer literacy seem to matter. For example, the CSE scale employed here was selected because it includes the basic computer skills most introductory MIS courses seek to provide. Today's students may accumulate a great deal of computer experience prior to college entry. However, this type of experience may provide a computer literacy that does not encompass the specific computer skills deemed necessary for success at the college level. These results also appear to be in line

with the findings of Taylor and Mounfield regarding success factors in college computer science courses. Taylor and Mounfield found it was the kind of programming experience high school students had rather than programming experience per se that was most indicative of success in college-level computer science courses.

It should also be noted that although the positive correlation between CSE and computer-dependent course performance was significant, it was not particularly high. To some extent, we believe that the particular nature of the CSE measure, and the unique requirements of this particular introductory MIS course, may have "muted" the strength of this relationship. Although the CSE measure most closely measured the skills taught in the course, the computer assignments forming the basis of the performance measure did require analysis and problem-solving skills that are unlikely to have been captured by the measure.

In addition, in this course, if students submitted an unsatisfactory computer-dependent assignment (e.g., they received less than 70% of the points available for the exercise), they were required to resubmit the assignment in satisfactory form. Although students received only the points awarded when an assignment was originally submitted, a side effect of this policy is that students were "forced" to become more computer competent during the course. Although this is a desirable outcome from an instructional point of view, this policy may have weakened the observed relationship between CSE and performance.

Finally, in order to assess the relevance of course content and training level to the student perceptions of computer literacy levels, the CSE measure was administered upon course completion. As displayed in

Table 3, there was a significant difference in precourse CSE, overall $M = 118.73$, overall $SD = 21.98$, per item $M = 3.39$, per item $SD = .63$, and postcourse CSE, overall $M = 153.60$, overall $SD = 4.97$, per item $M = 4.39$, per item $SD = .41$, $p < .001$. Student perceptions of their computer capabilities were positively enhanced during the semester, supporting previous findings in similar training settings. Given that the CSE scale items closely reflect the basic skills and concepts conveyed in this and similar computer literacy courses, it suggests that both training content and instructional level were necessary and appropriate for the group as a whole.

Technological advancements in education have received much attention in the last few years. Researchers have explored areas such as intelligent tutoring systems, expert systems, hypertext and multimedia as a possible substitute for a human teacher. It appears that the much attended user modelling aspect of this research has failed to address the diversity and richness of the educational environment- even in terms of their basic properties. The range of possibilities and diverse subject disciplines are indicative of the size of the problem, let alone identifying and catering for individual differences.

Traditional intelligent tutoring system (ITS) designers have attempted to provide tutoring facilities that try to satisfy all of the student, teacher, curriculum and institutional needs. However, this has proved to be an immense task. An increased understanding of this immensity has brought about increasing recognition of two concepts. The first relates to the general acceptance that knowledge has a contextual component and that the context provides a principled way to cluster, partition and organize knowledge. The second relates to the acceptance of the role of a student's common sense and general problem-solving abilities in the learning process -

never provide the sort of explicit diagnosis of student misconceptions that is sought to be provided in a traditional ITS.

It is also important to examine the suitability of diverse technologies in an educational context. It would be useful to identify the differences between computers and other educational technologies. In a learning context, a video clip accompanied by audio on a multimedia computer is no different from seeing it on a video player, unless the computer offers some opportunity for interaction. The value of such interaction, apart from the morale boosting confirmation of a correct action, lies in the province of *learning by mistakes*. This demonstrates that the *known-how* type of knowledge is more suitable to computer-based learning.

With the increasing demand for a broad based appreciation of multiple disciplines, there is an increasing pressure on academics to ensure the transfer of adequate skills to all students-some of whom may be less motivated than others. While staff resources for lecturing are relatively less affected by this increased demand, the tutorial aspect of teaching requires a growth that cannot be met due to insufficient funding. Increased reliance is placed on self-study, which poses no great problems for well-motivated students; however, it is the remaining students for whom an adequate level of knowledge transfer has to be ensured either directly through the teacher as an instructor or indirectly through the teacher as a facilitator for adequate knowledge construction. The resource intensive tutorials generally deal with the operational (*know-how*) aspect of knowledge and are suitable for software tutors as noted above.

A consortium of six British universities (known as the Byzantium Project) obtained substantial funding from the UK's Teaching and Learning Technology Programme

(TLTP) in order to develop tutoring software for introductory accounting. The funding was obtained on the strengths of DOS-based prototype software to Support the teaching and learning of Marginal Costing. The prototype was developed in order to demonstrate the utility of applied artificial intelligence to student learning in introductory numeric disciplines and to date has been used by more than 3,000 students.

Unlike traditional intelligent tutoring systems, the Byzantium project has a modest aim - that of producing intelligent tutoring tools (ITTs) that extend a lecturer's scope. This is achieved by horizontally partitioning some of the teaching activities eg, supervising the development of operational skills, and assigning them to a computer tutor. It should be recognized that computers, though quite powerful, are only one of the educational technologies that can be applied in a teaming environment.

This recognition in itself causes a shift away from comprehensive ITSs to ITTs that can be mixed and matched with other educational technologies and human teachers in various configurations in order to create a computer integrated learning environment (CILE) to suit classroom-based, open and distance learning strategies.

The Byzantium model of computer integrated learning

One approach to computer integration within a learning environment is reflected in the Byzantium model of CILE. The aims of the approach are:

- to use computers and humans for what they 'are (currently) good at;
- to employ useful software tools within the overall learning environment consisting of human teachers and educational technologies;

- to add a level of applied artificial intelligence to the software tools in order to provide a degree of support to students thereby enabling them to work by themselves;
- to let intelligent tutoring evolve in a bottom-up fashion rather than be designed top-down;
- to understand the economics of the learning environments and be concerned with assessment and course management as they consume substantial human resource - the system should provide economies of staff time in all areas of the teaching cycle, e.g. exposition, example setting and grading work.
- to appreciate the economics of software production and recognize that tutoring software is a joint cognitive system involving a student, tutoring software and a human teacher whose involvement may be greater or lesser depending on the capabilities of the software and the manner of its integration into the curriculum. In such joint cognitive systems, it is more economic at times to increase a student's understanding of the tutoring software or let a human teacher handle certain aspects of the teaching than expend huge effort and expense in trying to design a comprehensive ITS that attempts to comprehend predispositions and mental processes of students with different personalities and backgrounds;
- to acknowledge that various educational technologies have their own strengths and that a learning environment benefits synergistically from an appropriate use of multiple resources and therefore the usefulness of any resource can only be studied in the context of systems employing it.

The evolution of complexity

It should be recognized that a usable, true and substantial ITS is, intrinsically, a highly complex system. Achieving this level of complexity by designing it top-down is almost an impossible task, that is complicated further by the continuously evolving technology. It would, therefore, be useful to view the highly complex system as being made up of smaller entities which are networked- the connectivity producing the necessary flexibility and synergy. When this smaller entity has a degree of intelligence, it is an intelligent system of a lower order. To distinguish it from the conventional understanding of an ITS, it is called an intelligent tutoring tool (ITT).

It is hoped that when sufficient ITTs are ready, a second level of integrative tools will become possible. This integration can occur in two directions: vertical and horizontal. *Vertical integration* in a Ranking ITT allows holding and comparing results of different instances of an ITT, for example, comparing four different investment proposals in the presence of a ranking factor like the investor's attitude to risk. *Horizontal integration* in a Linking ITT allows use of multiple tools to solve a given problem -for example, a Marginal Costing ITT providing contribution figures for maximizing profit in a Linear Programming ITT. Thus, while a simple Linking ITT is a network of basic ITTs, it can be extended along the dimension of aggregation granularity to include other Ranking or Linking ITTs. The advantage of this approach is that the necessity of interpreting complex interactions and the construction of complex feedback messages is eliminated. A student who has failed to grasp any of the intermediate steps drops to an appropriate granularity level where the simple feedback messages are adequate.

The emergence of a higher degree of intelligence through connectivity is demonstrated by combining the

ITTs with a teaching support tool (TST) like the *Marker* software which enables testing of a student's interpretation for an examination-type narrative question and allows the system to discriminate between correct solution, incorrect interpretation but correct method, and incorrect solution.

An individual ITT is thus envisaged as an autonomous entity possessing rudimentary intelligence and then connected in a decentralized network enabling the emergence of a more sophisticated tutoring system. Even if this vision fails to materialize, the individual ITTs have their own utility and the total effort is not wasted. In order to appreciate better the strengths of an ITT, some aspects of their design are discussed next.

An ITT is designed around a software engine which stores and processes knowledge rules. Its main features are:

- a. a *knowledge base* containing the conceptual rules and processing information. It consists of two sections that together embed common didactic knowledge and domain didactic knowledge;
- b. a *student model* which records a student's progress towards a complete solution. It contains four basic items:
 - values entered by a student;
 - value status; for example, differentiating a zero value because of a blank variable, calculated zero or data not processed due to an infinity condition;
 - status of the edit fields filled in by students, such as blank or intrinsically dependent (to begin with) and independent or dependent variable when filled;

- user preferences of generative aspects of the interface; for example, in a Capital Investment Appraisal (CIA) ITT, students can choose whether the discount factors are given by the system, filled by using a 'Table' or calculated using a formula;
- c. an *expert model* which links to the knowledge rules. This derives correct outcomes and records how they are derived. In the case of a narrative question, the local expert model is based on a student's interpretation of data while the remote expert model in the *Marker* software provides the correct interpretation—their combination enabling

Marker to assign a partial score for an answer based on a correct method but an incorrect interpretation of given data, demonstrating emergence of a higher degree of overall intelligence from the connection of the rudimentary intelligence of an ITT to the *Marker* Teaching Support Tool (TST);

- b. a *tutoring module* which links students to the various parts of the engine through its user interface and gives advice based on the work done so far. It allows a student to adopt a different route to the solution than the expert model;
- c. a *user interface module* which provides interaction between an end-user and various parts of an ITT;
- f. a *level selector* which determines the functionality that is made available to a user through the interface. The levels are:
 - the *student level* which allows the use of the ITTs for learning without being able to create examples for others to use;

the *teacher level* that enables instructors to

create examples or templates for use by the students and to save model answers used by the *Marker*. Marking of students' assignment work is also possible at this level. An 'auto-solve' option is provided at this level that solves whatever it can as each independent variable is input to enable adjusting of inputs to obtain a desired scenario;

- an *administrator level* in which the global management of marking schemes and students' data is possible. This functionality was subsequently taken out of individual ITTs and centralized in the *Marker* to enable summarized results over a number of ITTs;
- g. set of *enhanced features* which embed functionalities such as:
 - a *random question generator* which randomly picks variables and assigns random values within specified bounds and then derives the solution by applying its knowledge rules. Thus, an ITT need not contain any data bank and all students can get individual questions but a lecturer can create a bank of questions to be used by all the students, if so desired;
 - a *dynamic feedback system* that generates feedback messages dynamically based on the information received from a tutoring module. The software's advice to a student is based on the work already done by that student and what the student should best do next.

In the case of an examination-type question - given in a narrative form and requiring a student to interpret data, identify given values and derive a solution -the lecturer's model answer held on the *Marker* software serves as the

overall expert model conveying the correct interpretation and the correct method while the application (local) expert model tests correctness of the method employed by the student. The combination of remote and local expert models enables the *Marker* to give a partial score for an answer based on a correct method but a wrong interpretation of given data. This clearly demonstrates the emergence of a higher degree of overall intelligence from the connection of the rudimentary intelligence of an ITT to the *Marker* software.

The implementation of applied artificial intelligence enables an ITT to generate random examples and assist students in solving them. The Byzantium ITT has two main modes of operation: the interactive mode and the assignment mode. In the *interactive mode*, the software does not let a student enter a wrong value and provides immediate feedback, as found in a student modelling technique known as model tracing - the difference being that a student's outcome is monitored rather than the process (rule) employed. Such dynamic feedback is considered essential for learning as it prevents (at source) any incorrect mental associations being made by a student.

In the *assignment mode* (which is meant for testing) there is no immediate feedback and the software allows any values to be entered. Feedback on their correctness is given after the work is marked. This is static feedback. As Routen observes, 'There are advantages with both forms of student monitoring. Static feedback perhaps is less obtrusive... while dynamic feedback prevents students from making gross errors and getting completely lost.'

Patel describes the variables on the screen as empty containers connected in a network of interrelationships. They represent an instance of their associated concepts.

Any value can be entered in any variable, provided the whole network remains consistent. The intermediate variables need not be filled in. This approach allows mental calculations and does not force a rigid path to the solution. Provided the value being entered is correct, the ITT assumes the intermediate steps to be well within a student's conceptual knowledge boundaries. If the value is incorrect, then the ITT guides the student in a graded manner. This advice is not based upon some hard-coded set of instructions. A student model is applied here to improve student learning.

According to the terminology used by Self, corrective, elaborative and evaluative aspects of the student model are used. The advice given by the software to the student is based upon the extent to which that student has been able to solve the problem so far and, in view of that, what that student should best do next. The corrective behaviour of the software tells the students whenever they make mistakes in calculations. If they make a mistake second time, elaborative behaviour comes into action, which suggests the various relationships by which certain values can be calculated. The suggestion depends on what the student has done so far. If enough information is not available on the screen to calculate a certain value, the software guides the student to fill in other values before attempting to complete that particular value. The evaluative aspect of the software is featured in the *assignment mode*, which is designed to assess the gain in a student's knowledge.

Diagnostic, predictive and strategic aspects of the student model are not considered to any significant degree in the software, the reason being that the learning topic has been 'sliced' into such small modules that they become the most basic units of that topic. A 'Road to London' paradigm is adopted, which is more concerned with 'what to do next' rather than 'how did I come here'.

Coupled with dynamic feedback this paradigm keeps on reinforcing the correct connections throughout the network of interrelationships and eliminates the need for the above aspects.

Interface design

The interface to the Byzantium ITT includes various features, such as:

- a context-sensitive help link to textual descriptions of topics;
- file and print management; and
- efficiency/learning support tools - which may be either general, such as an on-screen calculator, or application specific, such as the discount factor table in the CIA ITT.

The user-interface is mouse-driven and employs only push-buttons, scrollbars and edit controls - so as to make the interaction as simple and instinctive as possible. A push-button is also activated by a keystroke of the letter highlighted on its label. This allows for mixing the mouse and keyboard events to enhance a user's efficiency and comfort.

All data entry is done through an edit control, suitably masked to prevent entry of illegal data. The interface also reserves a certain area on the screen for interactive feedback, so users do not have to search the whole screen for the information that they require.

As students prefer greater use of diagrams and pictures, graphical representation of data is provided wherever possible and the on-screen tutorial text is augmented with illustrations and replicas of screens.

The Byzantium ITT is designed with the consideration of high visibility, logical decomposition

and visible dependencies. It does not provide ready solutions and waits for a student to execute an action before providing a hint.

The ITT accepts a correct entry, regardless of the state of the student outcomes model, allowing a student to carry out some operations mentally. It forces an intermediate step calculation only in case of an invalid entry - signifying that a student has not fully grasped the chain of relationships.

The ITT also provides support for decomposing complexity, that is, a student who is not confident about using a formula can call up a formula interface in the *Capital investment Appraisal* module, which has the formula decomposed into its various constituents. A student can obtain expert help in filling each of the constituents and can work in stages to derive a result of that formula in the context of the data to which the formula is to be applied. In the first level of integration, the ITTs are linked to Teaching Support Tools (TSTs) like the *Marker* mainly through the data driven programming paradigm, as each ITT, through its file structure, informs the *Marker* about its fields.

The development of the four diverse ITTs provided necessary information to formulate the methodology to construct a general purpose tutoring tool builder. The builder, and the interactive dialogue with a subject teacher, will produce the ITT for any numeric discipline. The ITT approach can be implemented on the Internet through the creation of intelligent tutoring applets (ITAs). The Internet allows these knowledge entities, in the form of ITAs, to be held and accessed in a structured manner.

With the appropriate structuring parameters, the ITAs created by different teachers build up to a large inventory of accessible knowledge that can be utilized by

all the teachers in various configurations of single or multiple ITAs to suit more advanced applications. The students will need to download the general purpose ITA modules only once, as they could be used by any ITA. In order to run each ITA, the students would need to download the appropriate ITA configuration file, created by a teacher and made available on the Internet.

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